Appendix F: Phase II Environmental Site Assessment

Appendices

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PHASE II ENVIRONMENTAL SITE INVESTIGATION

SEARS AT BREA MALL
100 BREA MALL DRIVE
BREA, CA 92821

Prepared for:

SPS Portfolio Holdings, LLC
c/o Simon Property Group
225 West Washington Street
Indianapolis, IN 46204

Apex Project No.: SIMON1801-001.02

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1.0 INTRODUCTION

Apex Companies, LLC (Apex) has prepared this Phase II Environmental Site Assessment (ESA) of the Sears Auto Center located within the Brea Mall property, addressed as 100 Brea Mall Road, Brea, California, **(Figure 1** and **Figure 2)**. The focus of the investigation was at the former auto center (the "Site") which was closed on January 27, 2018. A sump or floor drain in the former lawnmower service shop and sampling of hydraulic fluid in two elevators was also included in the scope of work.

1.1 Site Description

The Site is located within the Brea Mall at 100 Brea Mall Road in Brea, Orange County, California. (**Figure 1** and **Figure 2**). The mall comprises approximately 13.21 acres and includes the retail building and adjoining parking areas. The Sears store occupies approximately 167,000 square-feet and the automotive service center (the Site) occupies approximately 12,250 square-feet. The Site is located in an area that is primarily comprised of commercial development and is bordered to the north and east by retail tenants associated with the Brea Mall and parking areas to the west and south. The Brea Mall is bordered to the north by East Birch Street, to the east by South State College Boulevard, to the south by Imperial Highway 90, and to the west by South Randolph Avenue (**Figure 2**).

1.2 Previous Investigations

A Phase I Environmental Site Assessment report was prepared by Terracon and dated May 5, 2015. Terracon reported the Site was occupied by Sears at the time of their inspection and was used as a department store, automotive service center, and parking.

Terracon summarized a 1988 subsurface investigation associated with the removal of a 550-gallon waste oil underground storage tank (UST) located south of the existing oil-water separator (OWS). Petroleum Industry Consultants, Inc. (PIC) completed a letter report for the removal of the waste oil UST. Under the supervision of the Orange County Fire Authority and Orange County Environmental Health Department (OCEHD), PIC conducted confirmation sampling on September 30, 1988. The PIC Tank Removal Letter indicated no significant release and was dated October 7, 1988.

Terracon summarized an additional subsurface investigation associated with the removal of one hydraulic hoist/reservoir from the automotive service center in 2007. MACTEC Engineering removed the lift and performed confirmation sampling from July 31 to August 2, 2007. The samples reportedly exhibited total petroleum hydrocarbon (TPH) concentrations ranging from 68 to 143 milligrams per kilogram (mg/kg). Subsequent soil samples were collected from the excavation and analyzed for TPH and polychlorinated biphenyls (PCBs). Analytical results indicated that TPH and PCBs concentrations were below laboratory reporting limits. Based on the analytical results, no further action was recommended by Terracon.

A Phase II Environmental Site Assessment was prepared by Terracon and was dated April 17, 2015. The purpose of the assessment was to assess possible impacts resulting from the operation of the six active hydraulic hoists and the 4-stage oil/water separator at the Site. Based on the soil sampling results, impacts to soil were not detected in the hydraulic lift areas or adjacent to the oil/water separator. Terracon concluded

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that the usage of petroleum and volatile organic compounds (VOCs) in the locations of the hydraulic lifts and oil/water separator did not appear to have impacted the Site.

Apex completed a Phase I ESA of the Sears store and parking lot May 2018. Apex concluded that the presence of a sump, and floor drains, hydraulic lifts, oil/water separator and former waste oil tank associated with an automotive center with 40+ years of operation constituted Recognized Environmental Conditions (REC). Apex conducted this investigation at the request of SPS Portfolio Holdings, LLC to evaluate the RECs.

1.3 Hydrology

The Water Quality Control Plan (Basin Plan) for the Santa Ana Region (Region 8), prepared by the Santa Ana Regional Water Quality Control Board (SARWQCB) defines the Site as located within the La Habra Hydrologic Sub Area (845.62), of the Anaheim Hydrologic Area (845.60), of the Los Angeles-San Gabriel River Hydrologic Unit (805.00), within the Lower Santa Ana Basin. The Basin Plan identifies existing beneficial uses of groundwater for municipal and agricultural supply.

The nearest major surface water body is the Brea Creek, located approximately 1 mile west of the Site. The Brea Creek is a tributary of Coyote Creek which eventually flows to the San Gabriel River.

Depth to groundwater in the area is approximately 30 to 40 feet below ground surface, as identified in the February 27, 2018 *Preliminary Geotechnical Investigation* Report prepared by Professional Service Industries, Inc for the subject site. Apex did not encounter groundwater during our investigation. Based on the *Semi-Annual Status Report, Fourth Quarter 2016 and First Quarter 2017* for a Thrifty Oil service station located 0.70 miles west of the Site, the hydraulic gradient is reported as 0.038 ft./ft. with a southerly flow direction.

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2.0 FIELD ACTIVITIES AND SAMPLING METHODOLOGY

This section describes field methodologies used to conduct site assessment activities, including soil boring installation, soil sample collection, and hydraulic fluid sampling. Groundwater sampling activities were proposed in the original scope of work, but groundwater was not encountered during this investigation.

Prior to conducting the subsurface investigation, Apex notified Underground Service Alert (USA) of the proposed subsurface investigation activities as required by law prior to drilling. Apex also contracted a private utility locator, Pacific Coast Locators (PCL), to evaluate the proposed soil boring locations for possible conflicts with buried utilities not previously marked. PCL used ground penetrating radar (GPR), magnetic and electromagnetic methods to locate subsurface objects and utilities at and around the proposed borings.

Apex created a site-specific Health and Safety Plan (HASP) was created and reviewed during the daily tailgate meeting each day before work commenced.

2.1 Soil Borings and Sample Collection - Sears Auto Center

Apex mobilized to the Site with the private utility locator on March 20, 2018, to mark the position of the proposed boring locations and clear the locations of potential unmarked utilities. During this mobilization, Apex observed that all of the formerly operational hydraulic lifts, tools, equipment, fluid reservoirs, parts, supplies, and materials had been removed from the auto service center. The hydraulic lifts had been decommissioned by removing all surficial equipment. The outer hydraulic ram cylinders were abandoned in place with concrete.

Between April 3 and April 5, 2018, Apex and J & H Drilling (J &H) mobilized to the Site with a truck-mounted Geoprobe direct-push drill rig to perform the subsurface investigation.

Prior to sampling each location, surficial concrete or asphalt was either cored or drilled through with a star-bit used by the drill rig. The upper 5 feet of each boring was hand cleared with a hand auger to avoid damaging any unidentified subsurface utilities. Soil borings deeper than 5 feet below ground surface (bgs) were collected continuously during drilling using a core barrel lined with clear acetate sleeves. Apex opened each sleeve and logged and described soil types in general conformance with the unified soil classification system (USCS). The soil samples were screened in the field using a calibrated photoionization detector (PID) and samples were selected based on observed physical visual or odor evidence of contamination and/or PID detections. Apex collected samples into laboratory-provided 8-ounce glass jars with Teflon-lined caps for non-volatile analysis. Samples analyzed for VOCs were collected using a single-use *Terracore* sampler and preserved in the field using laboratory-prepared United States Environmental Protection Agency (EPA) Method 5035 sample vials. Samples were placed on ice in a cooler and submitted under proper chain-of-custody (COC) procedures to Enthalpy Analytical.

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The soil borings locations are presented by the areas or features they intended to assess, as shown on **Figure 3**:

1) The hydraulic lifts and floor drains inside of the auto service area
2) The oil/water separator and former waste oil tank area in front of the auto service area
3) A former sump or floor drain in the lawn mower service shop located in the southwest portion of the Sears building. The sump or drain was covered with plywood that was glued into the lip of the frame of the drain.
4) Passenger and freight elevator hydraulic fluid reservoirs

Hydraulic Lift and Floor Drain Locations

Sixteen soil borings (L1 to L16) were drilled next to former in ground hydraulic lift stations inside the auto service center. All sixteen hydraulic lift locations were drilled to 12 feet bgs using the Geoprobe drill rig and select soil samples were retained for analysis, as discussed above.

Seven soil borings (D-1 to D-7) were drilled to a depth of 4 feet bgs with a hand auger adjacent to each floor drain and select soil samples were retained for analysis.

Oil/water Separator and Former Waste Oil UST Locations

Apex drilled four borings (OW1 to OW4) around the oil/water separator located directly outside of the service center. The borings were drilled to a depth of 12 feet using the Geoprobe drill rig and select soil samples were retained for analysis.

Apex drilled one boring (OT1) in the center of the former waste oil tank excavation located directly outside of the service center and adjacent to the oil/water separator. The boring was drilled to a depth of 16 feet using the Geoprobe drill rig and select soil samples were retained for analysis.

Lawn Mower Service Shop

Apex drilled one boring to a depth of 4 feet with a hand auger adjacent to the sump or floor drain in the former lawn mower service shop and select soil samples were retained for analysis.

Elevators

Apex collected one hydraulic fluid sample from each reservoir tank of the passenger and freight elevators located on the first floor in the Sales Area using a hand-held dipper.

The sampling locations are presented in **Figure 3**.

After sampling was completed, the boreholes were filled with hydrated bentonite granules and the pavement/floor was patched with like materials. One soil sample from each of the borings described above

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was selected for laboratory analysis based on evidence of contamination. Additional soil samples were collected from each boring and archived by the laboratory for future analysis as warranted. A total of 93 soil samples were collected and of these, 31 samples were analyzed. Two hydraulic oil samples were collected and analyzed for PCBs only.

Boring logs for each sample location are included in **Appendix A**.

2.2 Investigation-Derived Waste Disposal

A total of two 55-gallon drums containing soil cuttings are being temporarily stored onsite. Documentation of their disposal will be provided when disposal is complete.

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3.0 LABORATORY ANALYSIS

The analyses for soil samples collected from the Sears Auto Center are described below.

Hydraulic Lifts – Soil samples were analyzed for TPH-gasoline-range organics (GRO), diesel-range organics (DRO), and oil-range organics (ORO), and polychlorinated biphenyls (PCBs).

Floor Drains –The soil samples were analyzed for TPH-GRO, TPH-DRO, TPH-ORO, VOCs, polycyclic aromatic hydrocarbons (PAHs), PCBs, and the California Leaking Underground Gasoline Tank (LUFT) Guidance Manual 5 metals (cadmium, chromium, lead, nickel, and zinc).

Oil/water Separator – The soil samples were analyzed for TPH-GRO, TPH-DRO, TPH-ORO, VOCs, PAHs, PCBs, and LUFT 5 metals.

Former Waste Oil UST – The soil samples were analyzed for TPH-GRO, TPH-DRO, TPH-ORO, VOCs, PAHs, PCBs, and LUFT 5 metals.

Lawn Mower Service Shop – The soil sample was analyzed for TPH-GRO, TPH-DRO, TPH-ORO, and BTEX (benzene, toluene, ethylbenzene, and xylenes) and methyl tertiary butyl ether, (MTBE).

Passenger and Freight Elevator Hydraulic Oil – Hydraulic oil samples were analyzed for PCBs.

TPH-GRO, TPH-DRO, and TPH-ORO were analyzed using modified EPA Method 8015B.

PAHs were analyzed using EPA Method 8270C, selective ion method (SIM).

PCBs were analyzed using EPA Method 8082.

LUFT 5 metals were analyzed using EPA method 6010B.

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4.0 FINDINGS

The findings of the soil sampling activities are presented below. Groundwater was not encountered during this investigation.

4.1 Soil Types

In general, the soil in the upper 16 feet of the Site consists predominantly of densely packed sandy silts and silty sands with increasing silt and moisture content at depth. There were no obvious indications of contamination based on PID screening and/or odor characteristics in the samples collected. Groundwater was not encountered in any of the borings.

4.2 Soil Sample Analytical Results

Apex analyzed a total of 31 soil samples from the 29 borings. The soil sample results are discussed below according to the area that they were collected from. Apex compared detections of individual analytes to the screening levels (SLs) published by the DTSC in Human Health Risk Assessment (HHRA) Note No. 3, February 2018 or the USEPA Regional Screening Levels (RSLs), November 2017 if there is no value published in HHRA Note 3.

There are no definitive state cleanup standards for TPH in soil; however, the Orange County Health Care Agency publishes their own TPH cleanup standards. For TPH detections less than 10 feet bgs in a commercial/industrial setting, residual TPH concentrations cannot exceed 100 mg/kg for TPH-GRO, 500 mg/kg for TPH-DRO, and 2,500 mg/kg for TPH-ORO.

A summary of the soil sample analytical results is in **Table 1** and shown on **Figures 4 through 7.**

4.2.1 Hydraulic Lifts

A total of sixteen soil samples were analyzed from the former hydraulic lift locations (L1 to L16), between the depths of 1 and 8 feet (**Figure 6**). TPH-GRO was not detected above the laboratory reporting limit in any of the soil samples from the hydraulic lifts. TPH-DRO and TPH-ORO was detected in three soil samples with concentrations of TPH-DRO ranging from 12 mg/kg in L7-5 to 26 mg/kg in L11-3. TPH-ORO concentrations range from 20 mg/kg in L4-2 to 24 mg/kg in L3-2 (**Table 1**). None of the TPH detections exceeded their respective OCHCA cleanup levels.

PCBs were not detected in any of the lift samples at or above the laboratory reporting limit (**Figure 7 and Table 1**).

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4.2.2 Floor Drains

Seven soil samples were analyzed from the floor drain locations (D1 to D7) at depths ranging between 1 and 4 feet bgs. TPH-DRO was detected in two samples (D5-1 and D7-2), both with detections of 11 mg/kg (**Figure 6 and Table 1**). Neither TPH-GRO nor TPH-ORO were detected in any of the samples analyzed. None of the TPH-DRO detections exceeded the OCHCA cleanup level.

Chromium, lead, nickel, and zinc were detected in all seven samples. Cadmium was detected in all but one sample. None of the metals detections exceed their respective health risk screening levels (**Figure 4 and Table 1**).

None of the floor drain samples analyzed had reported detections of VOCs, PAHs, or PCBs at or above the laboratory reporting limit (**Figure 5, Figure 7, and Table 1**).

4.2.3 Oil/Water Separator

Eight soil samples were analyzed from the area surrounding the oil-water separator. Soil samples were collected between 1 and 7 feet bgs.

There were no reported detections of PCBs, TPH-GRO, TPH-DRO, or TPH-ORO for any the samples collected at this location, except for OW-3 at 7 feet. This sample exhibited 61 mg/kg TPH-ORO. (**Figure 6, Figure 7 and Table 1)**.

VOC analysis of the soil samples had one reported detection of 4-Isopropyltoluene (OW1-1) at 23 micrograms per kilogram (µg/kg). A health risk screening level has not been established for this constituent (**Figure 5 and Table 1)**.

Two reported PAH detections (benzo(a)pyrene and pyrene) were detected in soil boring OW4-1 with concentrations of 10 and 11 µg/kg, respectively. Health risk screening levels have not been established for these constituents (**Figure 5 and Table 1)**.

Cadmium, chromium, lead, nickel, and zinc were detected in every sample. None of the metals detections exceed their respective health risk screening levels (**Figure 4 and Table 1**).

4.2.4 Former Waste Oil UST

Three soil samples were analyzed from one soil boring (OT1) at depths of 4 feet, 9 feet, and 12 feet bgs. The sample collected at 4 feet bgs was analyzed for TPH-GRO, TPH-DRO, TPH-ORO, VOCs, PCBs, PAHs, and LUFT 5 metals.

At sample OT1-4, TPH-ORO was reported at 650 mg/kg. Additional soil samples from boring OT1 were analyzed for TPH at depths of 9 and 12 feet bgs and had no reported laboratory detections (**Figure 6 and Table 1**). None of the TPH detections exceeded their respective OCHCA cleanup levels.

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None of the samples analyzed for VOCs, PCBs, or PAHs had reported detections at or above their respective laboratory reporting limits (**Figure 5, Figure 7, and Table 1**).

Cadmium, chromium, lead, nickel, and zinc were detected in every sample. None of the metals detections exceed their respective health risk screening levels (**Figure 4 and Table 1**).

4.2.5 Lawn Mower Service Shop

One soil sample (LS-1) was collected from the lawn mower service shop and analyzed for TPH-GRO, TPH-DRO, TPH-ORO, BTEX, and MTBE. None of these constituents were detected at or above their respective laboratory reporting limits (**Figure 3 and Table 1**).

4.3 Elevator Hydraulic Fluid Analytical Results

Two hydraulic oil samples were collected from the passenger elevator (SE1) and freight elevator (FE1) hydraulic oil reservoirs. PCBs were not detected at or above the laboratory limit in either sample (**Figure 2 and Table 1**).

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5.0 CONCLUSIONS AND RECOMMENDATIONS

Hydraulic Lifts and Floor Drains

- Five detections of TPH-DRO and TPH-ORO were reported from the hydraulic lift and floor drain samples. None of the concentrations reported were above their respective OCHCA cleanup levels. None of the samples had reported detections of PCBs and detected metals were all below their respective screening levels.

  No further assessment of the hydraulic lifts or floor drains are warranted.

Oil/water Separator and Former Waste Oil Tank

- At the former waste oil tank area, TPH-ORO was reported at 650 mg/kg at 4 feet bgs and subsequent samples analyzed from the 9 and 12-foot depth intervals did not have any reported concentrations of TPH. Documents reporting the oil tank removal in 1988 indicate that one sample collected beneath the former tank (at an unknown depth) was "non-detect" (<5 mg/kg) for total recoverable petroleum hydrocarbons (TRPH), and a stockpile soil sample had a reported TRPH detection of 27 mg/kg. During Apex's investigation of this area, no VOCs, PAHs, or PCBs were detected at or above reporting limits. Reported detections of metals were all below their respective health risk screening levels. TPH detected at this location did not exceed the OCHCA cleanup level. However, based upon historical data and recent data collected by Apex, limited amounts of TPH impacted soil may be present within the footprint of the former waste oil tank excavation which could require special handling if encountered during redevelopment of the Site, depending on the depth of any excavation or remedial grading.

- Around the oil/water separator area, there were no reported detections of TPH or PCBs, except for sample OW3 at 2 feet that exhibited a TPH-ORO concentration of 61 mg/kg. This concentration does not exceed OCHCA's cleanup goal of 2,500 mg/kg.

  Two samples had reported detections of VOCs and PAHs all of which were below established health risk screening levels. All reported metals detections were also below their respectively health risk screening levels.

- No further assessment of the former waste oil tank or oil/water separator is warranted at this time.

Lawn Mower Service Shop

- The soil sample collected from the lawn mower service shop did not have any reported concentrations of TPH-GRO, TPH-DRO, TPH-ORO, BTEX or MTBE. Further assessment in this area is not recommended.

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Passenger and Freight Elevator Hydraulic Oil

- PCBs were not detected in either of the two hydraulic fluid samples collected from the passenger and freight elevator reservoirs. Remnant hydraulic fluid can be managed as non-hazardous waste.

Because the length of occupation and history of activities at this Site, there is the potential to encounter previously undetected areas of contaminated soil. Apex recommends preparing a soil management plan (SMP) to describe the procedures that Site contractors must follow if contaminated soil is encountered and removed, stockpiled, stored, or transported offsite for disposal during the grading of the Site. If contaminated soil is encountered during any construction, this soil should be excavated, segregated, characterized, and managed separately for offsite disposal, and not be allowed to be re-used as fill on the Site.

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6.0 RELIANCE

This report was prepared as contracted with SPS Portfolio Holdings, LLC. This report can be used and relied upon by SPS Portfolio Holdings, LLC and the Simon Property Group. The parties' right to rely on, and use, the contents of the Report shall be subject to all limiting conditions and provisions set forth in the agreement between Apex and SPS Portfolio Holdings, LLC dated January 2, 2018

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7.0 LIMITATIONS

The information obtained is only relevant for the dates of the soil sampling performed or as of the date of the latest site visit. The information contained herein is only valid as of the date of the report and will require an update to reflect additional information obtained. The findings and conclusions as presented in this report are based on the services provided. In addition, the information obtained is not intended to address potential impacts related to sources other than those specified herein. The findings and conclusions presented in this report are relevant only to the portions of the site investigated. This report is conclusive only with respect to the information obtained. No guarantee or warranty, express or implied, is made regarding the results of this report and any subsequent reports, correspondence or consultation. The services summarized herein were performed in accordance with the local standard of care in the geographic region at the time the services were rendered.

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8.0 REFERENCES

DTSC Human Health Risk Assessment (HHRA) Note No. 3, February 2018

USEPA Regional Screening Levels (RSLs), November 2017

Terracon, 2014. Phase I Environmental Site Assessment Sears Store #1638/6558, 100 Brea Mall, Brea, California. Terracon, October 27.

Terracon, 2015. Phase II Environmental Site Assessment Sears Store #1638/6558, 100 Brea Mall, Brea, California. Terracon, April 17.

Terracon, 2015. Phase I Environmental Site Assessment Sears Store #1638 & Sears Auto Center# 6558, 100 Brea Mall, Brea, California. May 6.

Apex Companies, LLC, 2018. Phase I Environmental Site Assessment Brea Mall Sears, 100 Brea Mall Drive, Brea, California. May 2018

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FIGURES

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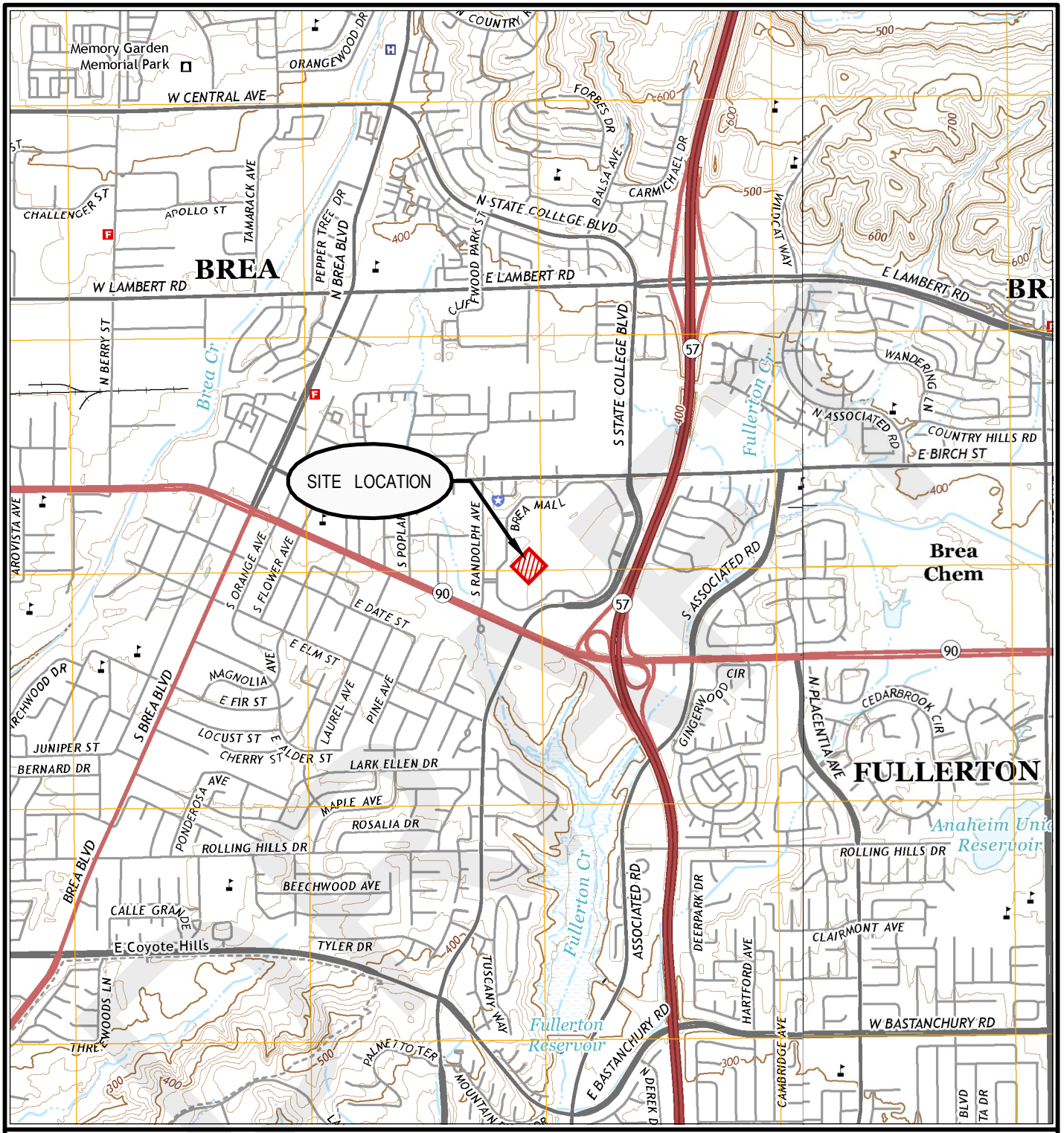


QUADRANGLE LOCATION

Scale 1:24000

0 1/2 1 MILE

1000 0 1000 2000 3000 FEET

(SOURCE OF MAP IS USGS 7.5 MINUTE QUADRANGLE MAP, LA HABRA (2015), CALIFORNIA)

CHECK BY	TS
DRAWN BY	EM
DATE	05-01-18
SCALE	AS SHOWN
CAD NO.	SIMON1801.01.02-A
PRJ NO.	SIMON1801-001.02

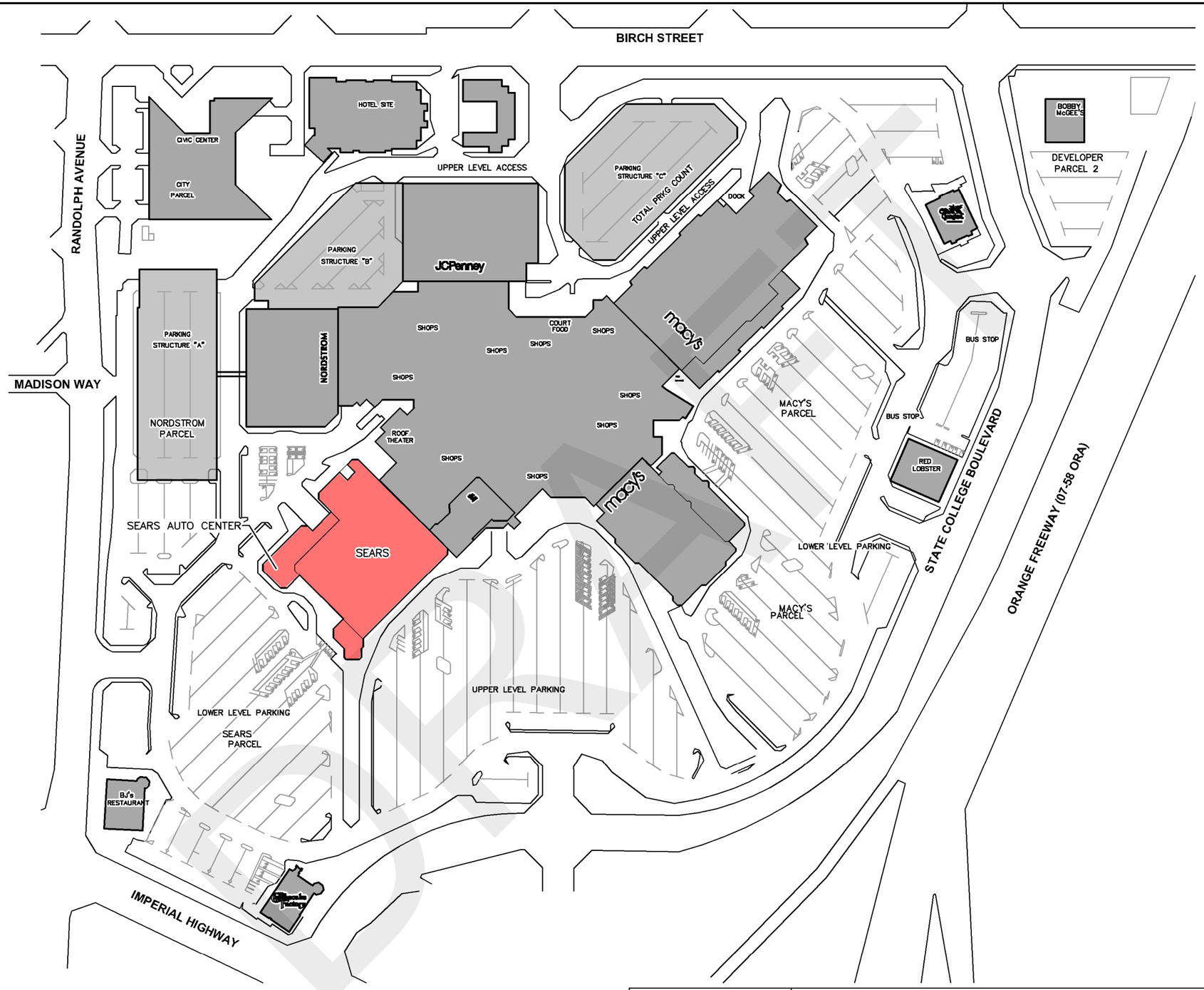
SITE LOCATION MAP

FORMER SEARS
BREA MALL
100 BREA MALL DRIVE
BREA, CALIFORNIA 92821

APEX

FIGURE

1



SCALE IN FEET

0 125 250 500

CHECK BY	TS
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SCALE	AS SHOWN
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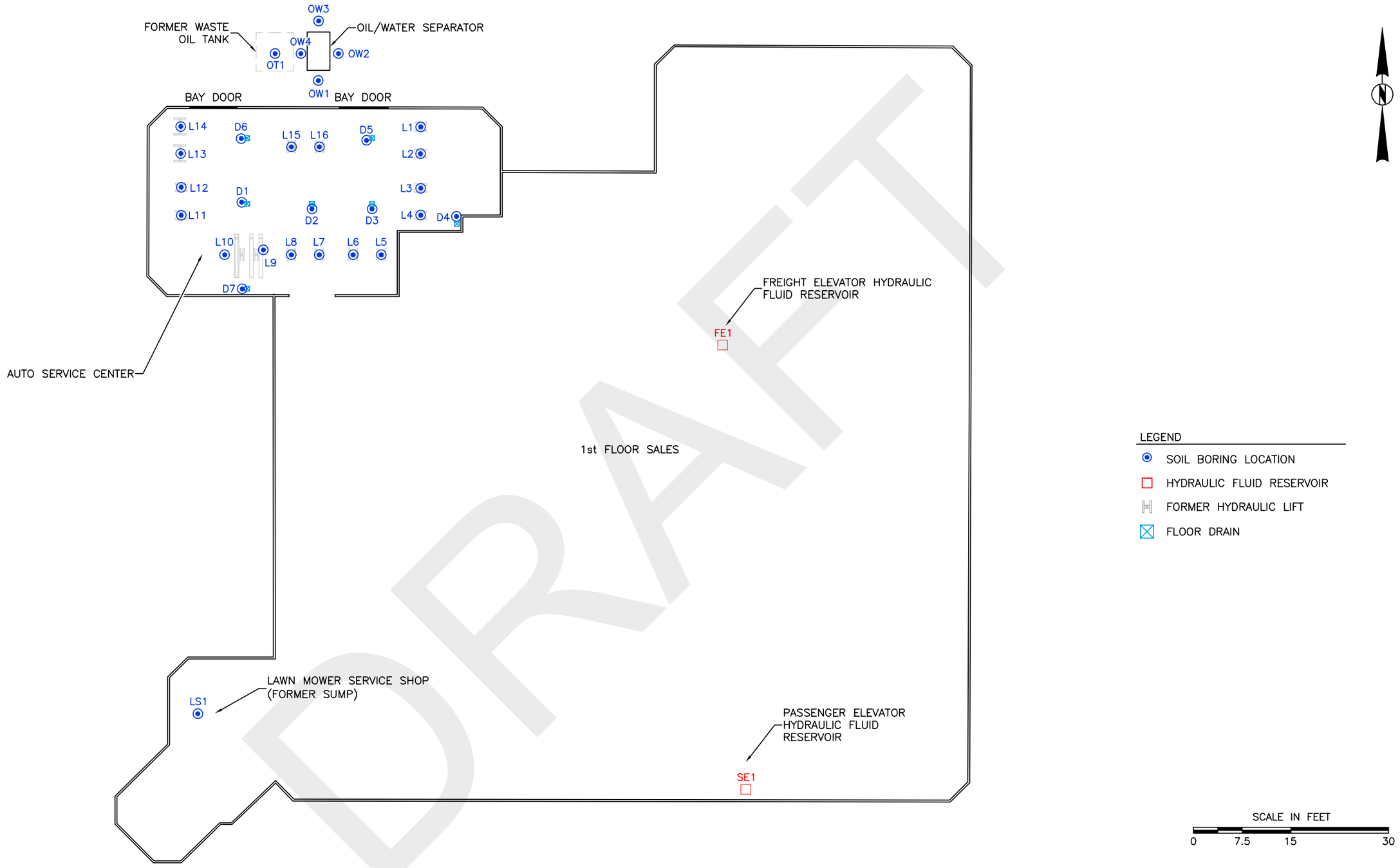
PRJ NO.	SIMON1801-001.02

GENERAL SITE PLAN

FORMER SEARS
BREA MALL
100 BREA MALL DRIVE
BREA, CALIFORNIA 92821

APEX

FIGURE 2



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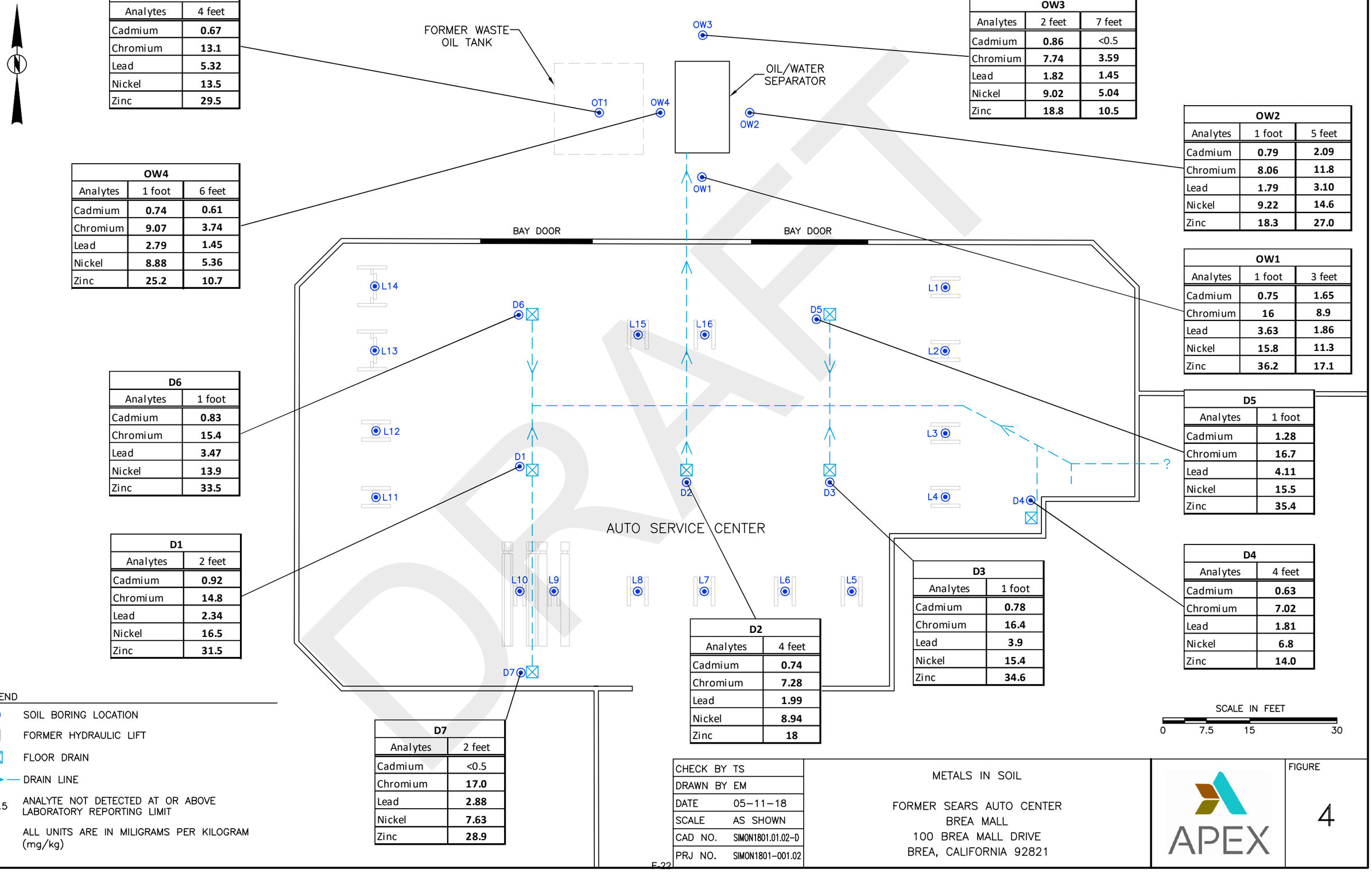
DATE	05-01-18
SCALE	AS SHOWN
CAD NO.	SIMON1801.01.02-C
PRJ NO.	SIMON1801-001.02

SAMPLE LOCATION MAP

FORMER SEARS
BREA MALL
100 BREA MALL DRIVE
BREA, CALIFORNIA 92821

APEX

FIGURE
3



OT1	
Analytes	4 feet
Cadmium	**0.67**
Chromium	**13.1**
Lead	**5.32**
Nickel	**13.5**
Zinc	**29.5**

OW3		
Analytes	2 feet	7 feet
Cadmium	**0.86**	<0.5
Chromium	**7.74**	**3.59**
Lead	**1.82**	**1.45**
Nickel	**9.02**	**5.04**
Zinc	**18.8**	**10.5**

OW2		
Analytes	1 foot	5 feet
Cadmium	**0.79**	**2.09**
Chromium	**8.06**	**11.8**
Lead	**1.79**	**3.10**
Nickel	**9.22**	**14.6**
Zinc	**18.3**	**27.0**

OW4		
Analytes	1 foot	6 feet
Cadmium	**0.74**	**0.61**
Chromium	**9.07**	**3.74**
Lead	**2.79**	**1.45**
Nickel	**8.88**	**5.36**
Zinc	**25.2**	**10.7**

OW1		
Analytes	1 foot	3 feet
Cadmium	**0.75**	**1.65**
Chromium	**16**	**8.9**
Lead	**3.63**	**1.86**
Nickel	**15.8**	**11.3**
Zinc	**36.2**	**17.1**

D6	
Analytes	1 foot
Cadmium	**0.83**
Chromium	**15.4**
Lead	**3.47**
Nickel	**13.9**
Zinc	**33.5**

D5	
Analytes	1 foot
Cadmium	**1.28**
Chromium	**16.7**
Lead	**4.11**
Nickel	**15.5**
Zinc	**35.4**

D1	
Analytes	2 feet
Cadmium	**0.92**
Chromium	**14.8**
Lead	**2.34**
Nickel	**16.5**
Zinc	**31.5**

D4	
Analytes	4 feet
Cadmium	**0.63**
Chromium	**7.02**
Lead	**1.81**
Nickel	**6.8**
Zinc	**14.0**

D2	
Analytes	4 feet
Cadmium	**0.74**
Chromium	**7.28**
Lead	**1.99**
Nickel	**8.94**
Zinc	**18**

D3	
Analytes	1 foot
Cadmium	**0.78**
Chromium	**16.4**
Lead	**3.9**
Nickel	**15.4**
Zinc	**34.6**

D7	
Analytes	2 feet
Cadmium	<0.5
Chromium	**17.0**
Lead	**2.88**
Nickel	**7.63**
Zinc	**28.9**

LEGEND

- SOIL BORING LOCATION
- FORMER HYDRAULIC LIFT
- FLOOR DRAIN
- DRAIN LINE
- <0.5 — ANALYTE NOT DETECTED AT OR ABOVE LABORATORY REPORTING LIMIT
- ALL UNITS ARE IN MILIGRAMS PER KILOGRAM (mg/kg)

SCALE IN FEET

0 7.5 15 30

CHECK BY	TS
DRAWN BY	EM
DATE	05-11-18
SCALE	AS SHOWN
CAD NO.	SIMON1801.01.02-D
PRJ NO.	SIMON1801-001.02

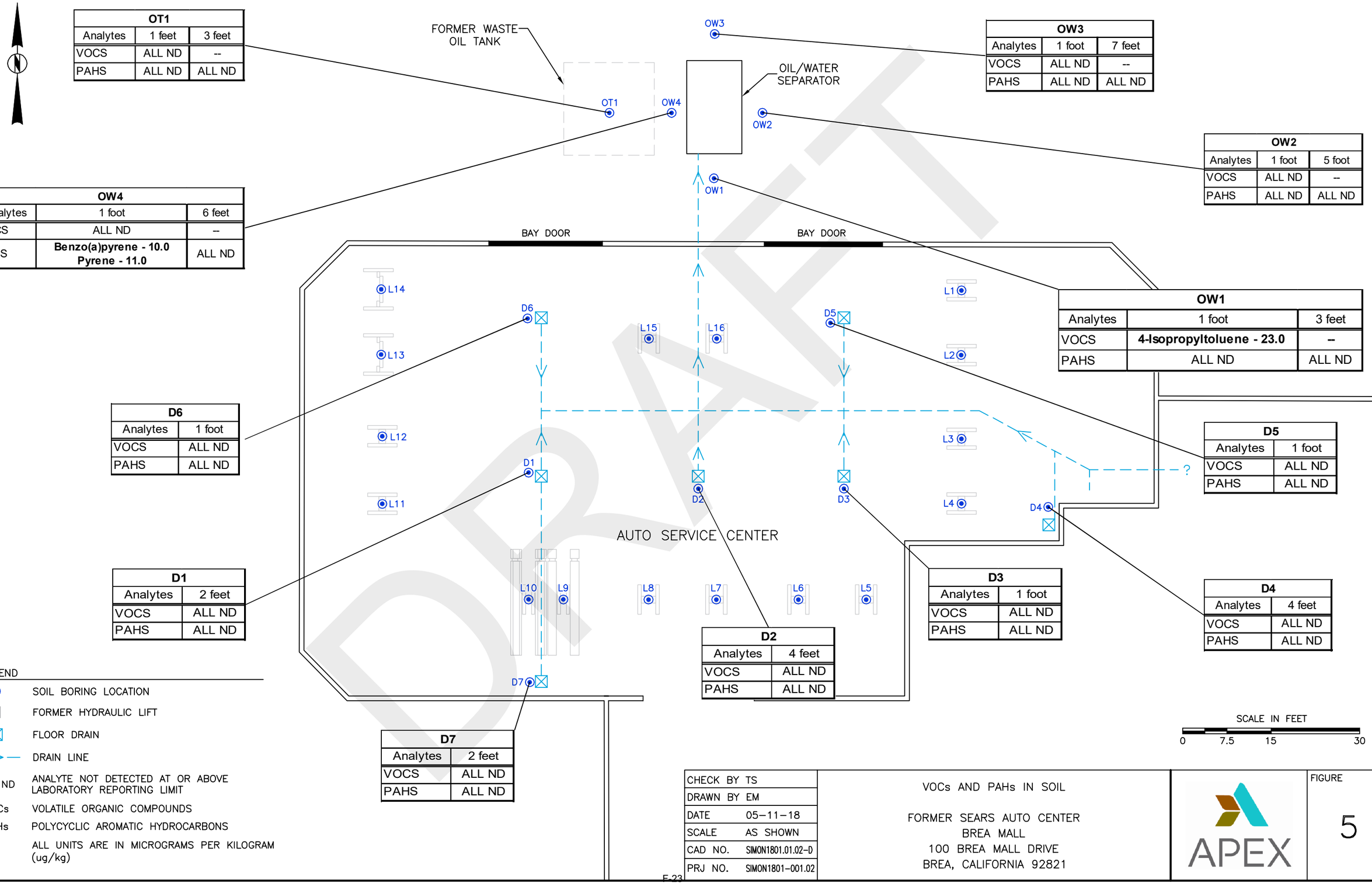
METALS IN SOIL

FORMER SEARS AUTO CENTER
BREA MALL
100 BREA MALL DRIVE
BREA, CALIFORNIA 92821

APEX

FIGURE 4

DRAFT



OT1		
Analytes	1 feet	3 feet
VOCS	ALL ND	--
PAHS	ALL ND	ALL ND

OW3		
Analytes	1 foot	7 feet
VOCS	ALL ND	--
PAHS	ALL ND	ALL ND

OW4		
Analytes	1 foot	6 feet
VOCS	ALL ND	--
PAHS	**Benzo(a)pyrene - 10.0** **Pyrene - 11.0**	ALL ND

OW2		
Analytes	1 foot	5 foot
VOCS	ALL ND	--
PAHS	ALL ND	ALL ND

OW1		
Analytes	1 foot	3 feet
VOCS	**4-Isopropyltoluene - 23.0**	--
PAHS	ALL ND	ALL ND

D6	
Analytes	1 foot
VOCS	ALL ND
PAHS	ALL ND

D5	
Analytes	1 foot
VOCS	ALL ND
PAHS	ALL ND

D1	
Analytes	2 feet
VOCS	ALL ND
PAHS	ALL ND

D3	
Analytes	1 foot
VOCS	ALL ND
PAHS	ALL ND

D2	
Analytes	4 feet
VOCS	ALL ND
PAHS	ALL ND

D4	
Analytes	4 feet
VOCS	ALL ND
PAHS	ALL ND

D7	
Analytes	2 feet
VOCS	ALL ND
PAHS	ALL ND

LEGEND

- SOIL BORING LOCATION
- FORMER HYDRAULIC LIFT
- FLOOR DRAIN
- DRAIN LINE
- ALL ND — ANALYTE NOT DETECTED AT OR ABOVE LABORATORY REPORTING LIMIT
- VOCs — VOLATILE ORGANIC COMPOUNDS
- PAHs — POLYCYCLIC AROMATIC HYDROCARBONS
- ALL UNITS ARE IN MICROGRAMS PER KILOGRAM (ug/kg)

CHECK BY	TS
DRAWN BY	EM
DATE	05-11-18
SCALE	AS SHOWN
CAD NO.	SIMON1801.01.02-D
PRJ NO.	SIMON1801-001.02

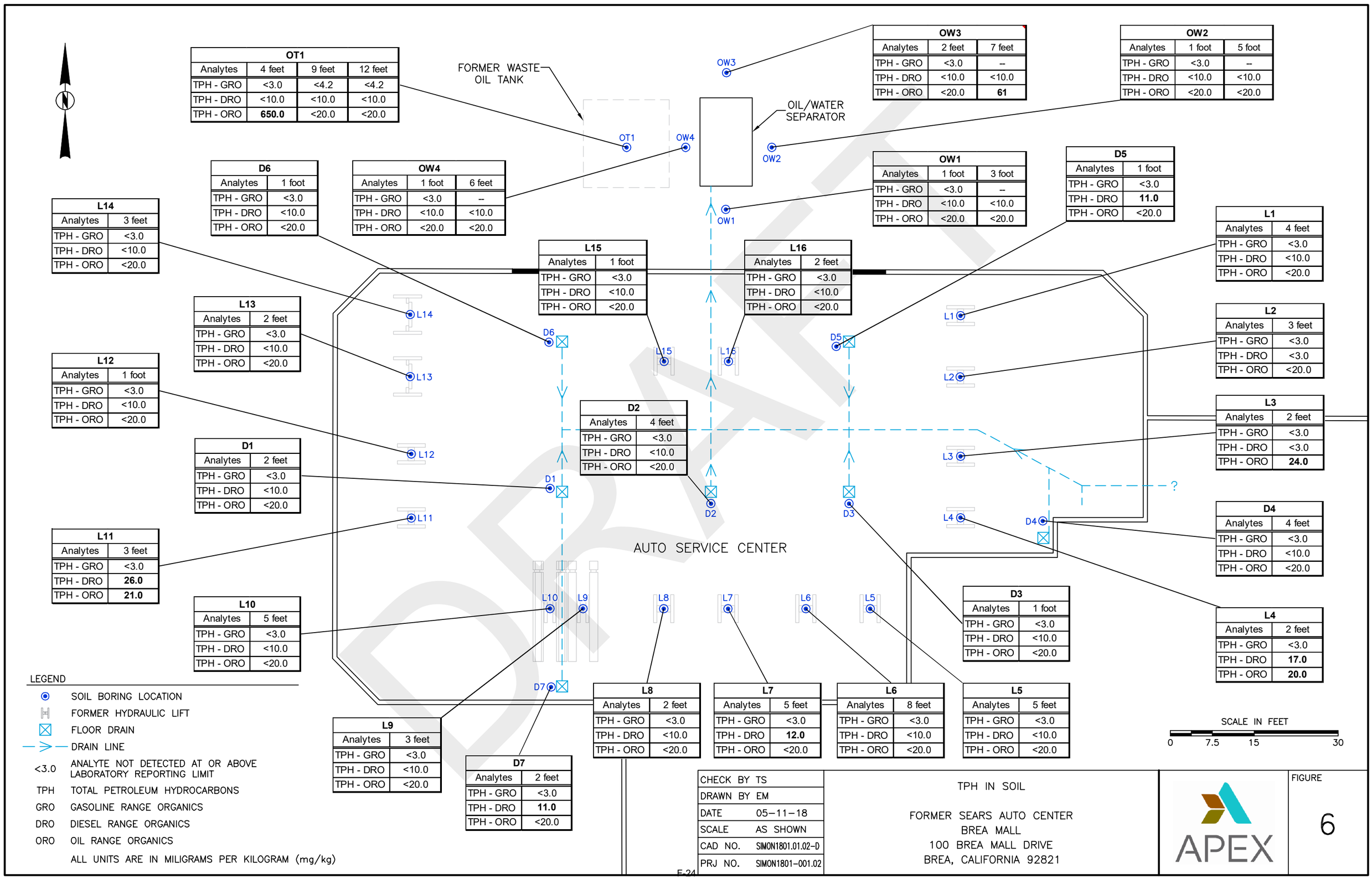
VOCs AND PAHs IN SOIL

FORMER SEARS AUTO CENTER
BREA MALL
100 BREA MALL DRIVE
BREA, CALIFORNIA 92821

APEX

FIGURE 5

DRAFT



OT1			
Analytes	4 feet	9 feet	12 feet
TPH - GRO	<3.0	<4.2	<4.2
TPH - DRO	<10.0	<10.0	<10.0
TPH - ORO	**650.0**	<20.0	<20.0

OW3		
Analytes	2 feet	7 feet
TPH - GRO	<3.0	--
TPH - DRO	<10.0	<10.0
TPH - ORO	<20.0	**61**

OW2		
Analytes	1 foot	5 foot
TPH - GRO	<3.0	--
TPH - DRO	<10.0	<10.0
TPH - ORO	<20.0	<20.0

D6	
Analytes	1 foot
TPH - GRO	<3.0
TPH - DRO	<10.0
TPH - ORO	<20.0

OW4		
Analytes	1 foot	6 feet
TPH - GRO	<3.0	--
TPH - DRO	<10.0	<10.0
TPH - ORO	<20.0	<20.0

OW1		
Analytes	1 foot	3 foot
TPH - GRO	<3.0	--
TPH - DRO	<10.0	<10.0
TPH - ORO	<20.0	<20.0

D5	
Analytes	1 foot
TPH - GRO	<3.0
TPH - DRO	**11.0**
TPH - ORO	<20.0

L14	
Analytes	3 feet
TPH - GRO	<3.0
TPH - DRO	<10.0
TPH - ORO	<20.0

L15	
Analytes	1 foot
TPH - GRO	<3.0
TPH - DRO	<10.0
TPH - ORO	<20.0

L16	
Analytes	2 feet
TPH - GRO	<3.0
TPH - DRO	<10.0
TPH - ORO	<20.0

L1	
Analytes	4 feet
TPH - GRO	<3.0
TPH - DRO	<10.0
TPH - ORO	<20.0

L13	
Analytes	2 feet
TPH - GRO	<3.0
TPH - DRO	<10.0
TPH - ORO	<20.0

L2	
Analytes	3 feet
TPH - GRO	<3.0
TPH - DRO	<3.0
TPH - ORO	<20.0

L12	
Analytes	1 foot
TPH - GRO	<3.0
TPH - DRO	<10.0
TPH - ORO	<20.0

D2	
Analytes	4 feet
TPH - GRO	<3.0
TPH - DRO	<10.0
TPH - ORO	<20.0

L3	
Analytes	2 feet
TPH - GRO	<3.0
TPH - DRO	<3.0
TPH - ORO	**24.0**

D1	
Analytes	2 feet
TPH - GRO	<3.0
TPH - DRO	<10.0
TPH - ORO	<20.0

D4	
Analytes	4 feet
TPH - GRO	<3.0
TPH - DRO	<10.0
TPH - ORO	<20.0

L11	
Analytes	3 feet
TPH - GRO	<3.0
TPH - DRO	**26.0**
TPH - ORO	**21.0**

L10	
Analytes	5 feet
TPH - GRO	<3.0
TPH - DRO	<10.0
TPH - ORO	<20.0

D3	
Analytes	1 foot
TPH - GRO	<3.0
TPH - DRO	<10.0
TPH - ORO	<20.0

L4	
Analytes	2 feet
TPH - GRO	<3.0
TPH - DRO	**17.0**
TPH - ORO	**20.0**

L9	
Analytes	3 feet
TPH - GRO	<3.0
TPH - DRO	<10.0
TPH - ORO	<20.0

L8	
Analytes	2 feet
TPH - GRO	<3.0
TPH - DRO	<10.0
TPH - ORO	<20.0

L7	
Analytes	5 feet
TPH - GRO	<3.0
TPH - DRO	**12.0**
TPH - ORO	<20.0

L6	
Analytes	8 feet
TPH - GRO	<3.0
TPH - DRO	<10.0
TPH - ORO	<20.0

L5	
Analytes	5 feet
TPH - GRO	<3.0
TPH - DRO	<10.0
TPH - ORO	<20.0

D7	
Analytes	2 feet
TPH - GRO	<3.0
TPH - DRO	**11.0**
TPH - ORO	<20.0

LEGEND

- SOIL BORING LOCATION
- FORMER HYDRAULIC LIFT
- FLOOR DRAIN
- DRAIN LINE
- <3.0 — ANALYTE NOT DETECTED AT OR ABOVE LABORATORY REPORTING LIMIT
- TPH — TOTAL PETROLEUM HYDROCARBONS
- GRO — GASOLINE RANGE ORGANICS
- DRO — DIESEL RANGE ORGANICS
- ORO — OIL RANGE ORGANICS

ALL UNITS ARE IN MILIGRAMS PER KILOGRAM (mg/kg)

SCALE IN FEET
0 7.5 15 30

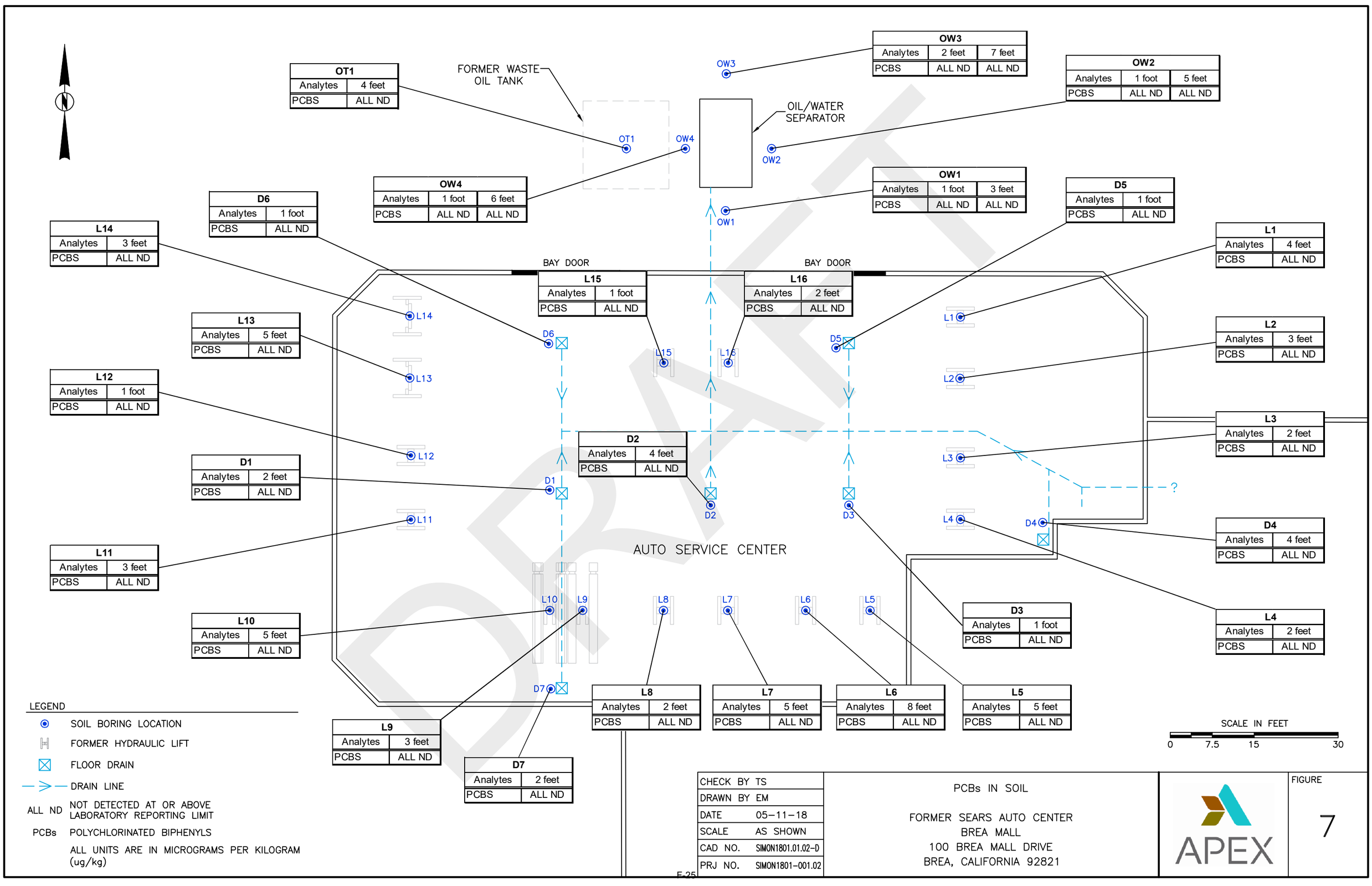
CHECK BY	TS
DRAWN BY	EM
DATE	05-11-18
SCALE	AS SHOWN
CAD NO.	SIMON1801.01.02-D
PRJ NO.	SIMON1801-001.02

TPH IN SOIL

FORMER SEARS AUTO CENTER
BREA MALL
100 BREA MALL DRIVE
BREA, CALIFORNIA 92821

APEX

FIGURE
6


OT1
Analytes | 4 feet
PCBS | ALL ND
FORMER WASTE OIL TANK
OW3
OW3
Analytes | 2 feet | 7 feet
PCBS | ALL ND | ALL ND
OW2
Analytes | 1 foot | 5 feet
PCBS | ALL ND | ALL ND
OT1
OW4
OIL/WATER SEPARATOR
OW2
OW4
Analytes | 1 foot | 6 feet
PCBS | ALL ND | ALL ND
OW1
Analytes | 1 foot | 3 feet
PCBS | ALL ND | ALL ND
OW1
D6
Analytes | 1 foot
PCBS | ALL ND
D5
Analytes | 1 foot
PCBS | ALL ND
L14
Analytes | 3 feet
PCBS | ALL ND
L1
Analytes | 4 feet
PCBS | ALL ND
BAY DOOR
BAY DOOR
L15
Analytes | 1 foot
PCBS | ALL ND
L16
Analytes | 2 feet
PCBS | ALL ND
L14
L1
L13
Analytes | 5 feet
PCBS | ALL ND
D6
L15
L16
D5
L2
Analytes | 3 feet
PCBS | ALL ND
L13
L2
L12
Analytes | 1 foot
PCBS | ALL ND
L3
Analytes | 2 feet
PCBS | ALL ND
D2
Analytes | 4 feet
PCBS | ALL ND
L12
D1
Analytes | 2 feet
PCBS | ALL ND
D1
D2
D3
L3
?
L4
D4
D4
Analytes | 4 feet
PCBS | ALL ND
L11
Analytes | 3 feet
PCBS | ALL ND
L11
AUTO SERVICE CENTER
L10
L9
L8
L7
L6
L5
D3
Analytes | 1 foot
PCBS | ALL ND
L4
Analytes | 2 feet
PCBS | ALL ND
L10
Analytes | 5 feet
PCBS | ALL ND
D7
L8
Analytes | 2 feet
PCBS | ALL ND
L7
Analytes | 5 feet
PCBS | ALL ND
L6
Analytes | 8 feet
PCBS | ALL ND
L5
Analytes | 5 feet
PCBS | ALL ND
L9
Analytes | 3 feet
PCBS | ALL ND
D7
Analytes | 2 feet
PCBS | ALL ND
LEGEND
SOIL BORING LOCATION
FORMER HYDRAULIC LIFT
FLOOR DRAIN
DRAIN LINE
ALL ND NOT DETECTED AT OR ABOVE LABORATORY REPORTING LIMIT
PCBs POLYCHLORINATED BIPHENYLS
ALL UNITS ARE IN MICROGRAMS PER KILOGRAM (ug/kg)
SCALE IN FEET
0 7.5 15 30
CHECK BY TS
DRAWN BY EM
DATE 05-11-18
SCALE AS SHOWN
CAD NO. SIMON1801.01.02-D
PRJ NO. SIMON1801-001.02
PCBs IN SOIL
FORMER SEARS AUTO CENTER
BREA MALL
100 BREA MALL DRIVE
BREA, CALIFORNIA 92821
APEX
FIGURE
7
E-25

TABLES

DRAFT

Table 1
Soil Sample Results
Sears Brea Mall
100 Brea Mall Drive
Brea, California

Sample Location	Sample Date	Sample Depth (ft)	TPH - GRO	TPH - DRO	TPH - ORO	BTEX & MTBE	VOCs	PAHs	PCBs	LUFT 5 Metals, mg/kg				
			mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	ug/kg	ug/kg	Cadmium	Chromium	Lead	Nickel	Zinc
Hydraulic Lifts														
L1	4/5/2018	4	<3.0	<10.0	<20.0	--	--	--	ALL ND	--	--	--	--	--
L2	4/5/2018	3	<3.0	<10.0	<20.0	--	--	--	ALL ND	--	--	--	--	--
L3	4/5/2018	2	<3.0	<10.0	**24.0**	--	--	--	ALL ND	--	--	--	--	--
L4	4/5/2018	2	<3.0	**17.0**	**20.0**	--	--	--	ALL ND	--	--	--	--	--
L5	4/3/2018	5	<3.0	<10.0	<20.0	--	--	--	ALL ND	--	--	--	--	--
L6	4/3/2018	8	<3.0	<10.0	<20.0	--	--	--	ALL ND	--	--	--	--	--
L7	4/3/2018	5	<3.0	**12.0**	<20.0	--	--	--	ALL ND	--	--	--	--	--
L8	4/3/2018	2	<3.0	<10.0	<20.0	--	--	--	ALL ND	--	--	--	--	--
L9	4/4/2018	3	<3.0	<10.0	<20.0	--	--	--	ALL ND	--	--	--	--	--
L10	4/4/2018	5	<3.0	<10.0	<20.0	--	--	--	ALL ND	--	--	--	--	--
L11	4/4/2018	3	<3.0	**26.0**	**21.0**	--	--	--	ALL ND	--	--	--	--	--
L12	4/4/2018	1	<3.0	<10.0	<20.0	--	--	--	ALL ND	--	--	--	--	--
L13*	4/5/2018	2	<3.0	<10.0	<20.0	--	--	--	ALL ND	--	--	--	--	--
L14	4/5/2018	3	<3.0	<10.0	<20.0	--	--	--	ALL ND	--	--	--	--	--
L15	4/5/2018	1	<3.0	<10.0	<20.0	--	--	--	ALL ND	--	--	--	--	--
L16	4/5/2018	2	<3.0	<10.0	<20.0	--	--	--	ALL ND	--	--	--	--	--
Floor Drains														
D1	4/3/2018	2	<3.0	<10.0	<20.0	--	ALL ND	ALL ND	ALL ND	**0.92**	**14.8**	**2.34**	**16.5**	**31.5**
D2	4/4/2018	4	<3.0	<10.0	<20.0	--	ALL ND	ALL ND	ALL ND	**0.74**	**7.28**	**1.99**	**8.94**	**18.0**
D3	4/4/2018	1	<3.0	<10.0	<20.0	--	ALL ND	ALL ND	ALL ND	**0.78**	**16.4**	**3.9**	**15.4**	**34.6**
D4	4/5/2018	4	<3.0	<10.0	<20.0	--	ALL ND	ALL ND	ALL ND	**0.63**	**7.02**	**1.81**	**6.8**	**14.0**
D5	4/4/2018	1	<3.0	**11.0**	<20.0	--	ALL ND	ALL ND	ALL ND	**1.28**	**16.7**	**4.11**	**15.5**	**35.4**
D6	4/4/2018	1	<3.0	<10.0	<20.0	--	ALL ND	ALL ND	ALL ND	**0.83**	**15.4**	**3.47**	**13.9**	**33.5**
D7	4/3/2018	2	<3.0	**11.0**	<20.0	--	ALL ND	ALL ND	ALL ND	<0.5	**17.0**	**2.88**	**7.63**	**28.9**
Oil Water Separator														
OW1	4/5/2018	1	<3.0	<10.0	<20.0	--	**4-Isopropyltoluene - 23.0**	ALL ND	ALL ND	**0.75**	**16.0**	**3.63**	**15.8**	**36.2**
OW1*	4/5/2018	3	--	<10.0	<20.0	--	**--**	--	ALL ND	**1.65**	**8.9**	**1.86**	**11.3**	**17.1**
OW2	4/5/2018	1	<3.0	<10.0	<20.0	--	ALL ND	ALL ND	ALL ND	**0.79**	**8.06**	**1.79**	**9.22**	**18.3**
OW2*	4/5/2018	5	--	<10.0	<20.0	--	--	--	ALL ND	**2.09**	**11.8**	**3.10**	**14.6**	**27.0**
OW3	4/5/2018	2	<3.0	<10.0	<20.0	--	ALL ND	ALL ND	ALL ND	**0.86**	**7.74**	**1.82**	**9.02**	**18.8**
OW3*	4/5/2018	7	--	<10.0	**61**	--	--	--	ALL ND	<0.5	**3.59**	**1.45**	**5.04**	**10.5**
OW4	4/5/2018	1	<3.0	<10.0	<20.0	--	ALL ND	**Benzo(a)pyrene - 10.0 Pyrene - 11.0**	ALL ND	**0.74**	**9.07**	**2.79**	**8.88**	**25.2**
OW4*	4/5/2018	6	--	<10.0	<20.0	--	--	**ALL ND**	ALL ND	**0.61**	**3.74**	**1.45**	**5.36**	**10.7**
Former Waste Oil UST														
OT1	4/4/2018	4	<3.0	<10.0	**650.0**	--	ALL ND	ALL ND	ALL ND	**0.67**	**13.1**	**5.32**	**13.5**	**29.5**
OT1	4/4/2018	9	<4.2	<10.0	<20.0	--	--	--	--	--	--	--	--	--
OT1	4/4/2018	12	<4.2	<10.0	<20.0	--	--	--	--	--	--	--	--	--
Former Lawn Service Room														
LS1	4/3/2018	2	<3.0	<10.0	<20.0	ALL ND	--	--	--	--	--	--	--	--
Elevator Hydraulic Fluid Reservoir														
FE-1	4/3/2018	N/A	--	--	--	--	--	--	ALL ND	--	--	--	--	--
SE-1	4/3/2018	N/A	--	--	--	--	--	--	ALL ND	--	--	--	--	--
Screening Levels														
HHRA or USEPA RSL[1]			NE	NE	NE	Varies by compound. None detected this investigation	Varies by compound. None detected this investigation	Benzo(a)pyrene - 2,100 Pyrene - 23,000,000	0.72 - 27.0, depending on Aroclor	9,300	170,000 (Cr III)	320	3,100	350,000
OCHCA			100	500	2,500	NE	NE	NE	NE	NE	NE	NE	NE	NE

NOTES:

ALL ND = NOT DETECTED AT OR ABOVE LABORATORY REPORTING LIMIT
-- - Not analyzed NE - Not Established
mg/kg = milligrams per kilogram µg/kg = micrograms per kilogram
TPH - Total Petroleum Hydrocarbons
ORO - Oil Range Organics GRO - Gasoline Range Organics DRO - Diesel Range Organics
* - Sample analyzed past holding time

BTEX - Benzene, Toluene, Ethylbenzene, Xylenes MTBE - Methyl tertiary butyl ether
PAHs - Polycyclic Aromatic Hydrocarbons PCBs - Polychlorinated Biphenyls
LUFT - California State Water Resources Control Board - Leaking Underground Fuel Tank (LUFT) Guidance Manual, 2012
1 - California Department of Toxic Substances Control - Human Health Risk Assessment (HHRA) Commercial/Industrial Screening Level, Jan. 2018, or United States Environmental Protection Agency Regional Screening Levels (RSLs), November 2017
OCHCA - Orange County Health Care Agency - TPH cleanup standards for commercial/industrial setting

APPENDIX A

BORING LOGS

DRAFT

Apex Companies, LLC 10675 Sorrento Valley Road San Diego, CA 92121 Phone: 858-558-1120				Boring No:	L1
Sample Method: Hand Auger and Direct Push Drill Rig	Proj. Name:	Sears-Brea Mall			
	Proj. Number:	SIMON1801-001	Logged By:		Tyler Steimel
	Date Start:	4/3/2018	Depth to Water (ATD):		Not Encountered
	Date End:	4/5/2018	Boring Diameter:		4.0-Inches

Depth	Interval	Sample Information: Sample number	Sample Information: PID (PPM)	Sample Description & Classification	Boring Backfill Construction
0				**Poorly Graded SAND with Silt (SP-SM)** - dense, dry, light brown (7.5YR 6/4), 90% fine to medium grained sand, 10% silt	Concrete
1	X	L1-1	2.6		
2	X	L1-2	1.9		
3			0.3		
4	X	L1-4	0.2		Hydrated Granular Bentonite
5			0.0		
6					
7	X	L1-7	0	**Poorly Graded SAND with Silt (SP-SM)** - dense, dry, dark brown (7.5YR 3/3), 90% fine to medium grained sand, 10% silt	
8				**Poorly Graded SAND with Silt (SP-SM)** - dense, dry, light brown (7.5YR 6/4), 90% fine to medium grained sand, 10% silt	
9					
10					
11					
12	X	L1-12	0		
13				BOTTOM OF BORING	
14					
15					
16					
17					
18					
19					
20					

DRAFT

Apex Companies, LLC 10675 Sorrento Valley Road San Diego, CA 92121 Phone: 858-558-1120				Boring No:	L2
Sample Method: Hand Auger and Direct Push Drill Rig	Proj. Name:	Sears-Brea Mall			
	Proj. Number:	SIMON1801-001	Logged By:		Tyler Steimel
	Date Start:	4/3/2018	Depth to Water (ATD):		Not Encountered
	Date End:	4/5/2018	Boring Diameter:		4.0-Inches

Depth	Interval	Sample Information: Sample number	Sample Information: PID (PPM)	Sample Description & Classification	Boring Backfill Construction
0				**Silty SAND (SM) -** dense, dry, light brown (7.5YR 6/4), 70% fine to medium grained sand, 30% silt	Concrete
1	X	L2-1	1.1		
2			0.6		
3	X	L2-3	0.2		
4			0		Hydrated Granular Bentonite
5			0		
6					
7	X	L2-7	0	**Silty SAND (SM)** - dense, dry, brown (7.5YR 4/3), 70% fine grained sand, 30% silt	
8				**Silty SAND (SM)** - dense, slightly moist, brown (7.5YR 4/3), 70% fine grained sand, 30% silt	
9					
10					
11					
12	X	L2-12	0		
13				BOTTOM OF BORING	
14					
15					
16					
17					
18					
19					
20					

DRAFT

Apex Companies, LLC 10675 Sorrento Valley Road San Diego, CA 92121 Phone: 858-558-1120			Boring No:	L3
Sample Method: Hand Auger and Direct Push Drill Rig	Proj. Name:	Sears-Brea Mall		
	Proj. Number:	SIMON1801-001	Logged By:	Tyler Steimel
	Date Start:	4/3/2018	Depth to Water (ATD):	Not Encountered
	Date End:	4/5/2018	Boring Diameter:	4.0-Inches

Depth	Interval	Sample Information: Sample number	Sample Information: PID (PPM)	Sample Description & Classification	Boring Backfill Construction
0					Concrete
1			0	**Silty SAND (SM)** - dense, dry, light brown (7.5YR 6/4), 70% fine to medium grained sand, 30% silt	
2	X	L3-2	0.3		
3	X	L3-3	1.7		
4			0		Hydrated Granular Bentonite
5			0		
6					
7					
8	X	L3-8	0	**Silty SAND (SM)** - dense, dry, dark brown (7.5YR 3/3), 70% fine to medium grained sand, 30% silt	
9					
10					
11					
12	X	L3-12	0		
13				BOTTOM OF BORING	
14					
15					
16					
17					
18					
19					
20					

DRAFT

Apex Companies, LLC 10675 Sorrento Valley Road San Diego, CA 92121 Phone: 858-558-1120				Boring No:	L4
Sample Method: Hand Auger and Direct Push Drill Rig	Proj. Name:	Sears-Brea Mall			
	Proj. Number:	SIMON1801-001	Logged By:		Tyler Steimel
	Date Start:	4/3/2018	Depth to Water (ATD):		Not Encountered
	Date End:	4/5/2018	Boring Diameter:		4.0-Inches

Depth	Interval	Sample Information: Sample number	Sample Information: PID (PPM)	Sample Description & Classification	Boring Backfill Construction
0				**Silty SAND (SM) -** dense, dry, very pale brown (10YR 8/8), 75% fine to medium grained sand, 25% silt	Concrete
1			0		
2	X	L4-2	0.1		
3			0		Hydrated Granular Bentonite
4			0		
5			0		
6					
7					
8	X	L4-8	0	**Silty SAND (SM)** - dense, slightly moist, brown (7.5YR 4/3), 75% fine to medium grained sand, 25% silt	
9					
10					
11					
12	X	L4-12	0		
13				BOTTOM OF BORING	
14					
15					
16					
17					
18					
19					
20					

DRAFT

Apex Companies, LLC 10675 Sorrento Valley Road San Diego, CA 92121 Phone: 858-558-1120			Boring No:	L5
Sample Method: Hand Auger and Direct Push Drill Rig	Proj. Name:	Sears-Brea Mall		
	Proj. Number:	SIMON1801-001	Logged By:	Tyler Steimel
	Date Start:	4/3/2018	Depth to Water (ATD):	Not Encountered
	Date End:	4/5/2018	Boring Diameter:	4.0-Inches

Depth	Interval	Sample Information: Sample number	Sample Information: PID (PPM)	Sample Description & Classification	Boring Backfill Construction
0				**Well Graded SAND (SW)** - dense, dry, very pale brown (10YR 8/8), 95% sand, 5% gravel up to 1",	← **Concrete**
1			0		
2			0		
3			0		
4			0		← **Hydrated Granular Bentonite**
5	X	L5-5	0		
6				**Well Graded SAND (SW)** - dense, dry, light brownish gray (10YR 6/2), 95% sand, 5% gravel up to 1",	
7				No product recovery	
8					
9					
10	X	L5-10	0		
11				**Well Graded SAND (SW)** - dense, slightly moist, light brownish gray (10YR 6/2), 95% sand, 5% gravel up to 1",	
12	X	L5-12	0		
13				BOTTOM OF BORING	
14					
15					
16					
17					
18					
19					
20					

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Apex Companies, LLC 10675 Sorrento Valley Road San Diego, CA 92121 Phone: 858-558-1120			Boring No:	L6
Sample Method: Hand Auger and Direct Push Drill Rig	Proj. Name:	Sears-Brea Mall		
	Proj. Number:	SIMON1801-001	Logged By:	Tyler Steimel
	Date Start:	4/3/2018	Depth to Water (ATD):	Not Encountered
	Date End:	4/5/2018	Boring Diameter:	4.0-Inches

Depth	Interval	Sample Information: Sample number	Sample Information: PID (PPM)	Sample Description & Classification	Boring Backfill Construction
0				**Poorly Graded SAND (SP) -** dense, dry, brownish gray (10YR 6/2), 100% fine to medium grained sand	← **Concrete**
1			0		
2			0		
3	X	L6-3	0.3	**Poorly Graded SAND with Silt (SP-SM)** - medium dense, dry, reddish brown (2.5YR 4/4), 90% fine grained sand, 10% silt	
4			0		← **Hydrated Granular Bentonite**
5			0.1		
6				**Poorly Graded SAND (SP)** - loose, slightly moist, reddish brown (2.5YR 4/4), 100% fine grained sand	
7					
8	X	L6-8	0		
9					
10					
11					
12	X	L6-12	0		
13				BOTTOM OF BORING	
14					
15					
16					
17					
18					
19					
20					

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Apex Companies, LLC 10675 Sorrento Valley Road San Diego, CA 92121 Phone: 858-558-1120			Boring No:	L7
Sample Method: Hand Auger and Direct Push Drill Rig	Proj. Name:	Sears-Brea Mall		
	Proj. Number:	SIMON1801-001	Logged By:	Tyler Steimel
	Date Start:	4/3/2018	Depth to Water (ATD):	Not Encountered
	Date End:	4/5/2018	Boring Diameter:	4.0-Inches

Depth	Interval	Sample Information: Sample number	Sample Information: PID (PPM)	Sample Description & Classification	Boring Backfill Construction
0				**Poorly Graded SAND (SP) -** dense, dry, light brownish gray (10YR 6/2), 100% fine to medium grained sand	Concrete
1			0		
2			0		
3			0		
4			0		Hydrated Granular Bentonite
5	X	L7-5	0		
6				**Poorly Graded SAND (SP)** - loose, slightly moist, light brownish gray (10YR 6/2), 95% fine to medium grained sand, 5% silt	
7	X	L7-7.5	0		
8	X		0		
9				**Poorly Graded SAND (SP)** - loose, slightly moist, reddish brown (2.5YR 4/4), 95% fine grained sand, 5% silt	
10					
11					
12	X	L7-12	0		
13				BOTTOM OF BORING	
14					
15					
16					
17					
18					
19					
20					

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Apex Companies, LLC 10675 Sorrento Valley Road San Diego, CA 92121 Phone: 858-558-1120			Boring No:	L8
Sample Method: Hand Auger and Direct Push Drill Rig	Proj. Name:	Sears-Brea Mall		
	Proj. Number:	SIMON1801-001	Logged By:	Tyler Steimel
	Date Start:	4/3/2018	Depth to Water (ATD):	Not Encountered
	Date End:	4/5/2018	Boring Diameter:	4.0-Inches

Depth	Interval	Sample Information: Sample number	Sample Information: PID (PPM)	Sample Description & Classification	Boring Backfill Construction
0				**Poorly Graded SAND with Silt (SP-SM) -** medium dense, slightly moist, brown (7.5YR 4/3), 90% fine grained sand, 10% silt	Concrete
1			0.6		
2	X	L8-2	0.6		
3			0.4		
4			0.4		Hydrated Granular Bentonite
5			0		
6	X	L8-6	0		
7					
8					
9	X	L8-9	0		
10					
11					
12	X	L8-12	0		
13				BOTTOM OF BORING	
14					
15					
16					
17					
18					
19					
20					

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Apex Companies, LLC 10675 Sorrento Valley Road San Diego, CA 92121 Phone: 858-558-1120				Boring No:	L9
Sample Method: Hand Auger and Direct Push Drill Rig	Proj. Name:	Sears-Brea Mall			
	Proj. Number:	SIMON1801-001	Logged By:		Tyler Steimel
	Date Start:	4/3/2018	Depth to Water (ATD):		Not Encountered
	Date End:	4/5/2018	Boring Diameter:		4.0-Inches

Depth	Interval	Sample Information: Sample number	Sample Information: PID (PPM)	Sample Description & Classification	Boring Backfill Construction
0				**Poorly Graded SAND with Silt (SP-SM) -** dense, dry, brown (2.5YR 5/3), 90% fine to medium grained sand, 10% silt,	Concrete
1			0		
2			0		
3	X	L9-3	0		
4			0		Hydrated Granular Bentonite
5			0		
6					
7					
8	X	L9-8	0	**Poorly Graded SAND with Silt (SP-SM)** - dense, dry, brown (2.5YR 5/3) with scattered black staining, 90% fine to medium grained sand, 10% silt,	
9				**Silty SAND (SM)** - dense, slightly moist, brown (2.5YR 5/3), 85% fine to medium grained sand, 15% silt,	
10					
11					
12	X	L9-12	0		
13				BOTTOM OF BORING	
14					
15					
16					
17					
18					
19					
20					

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Apex Companies, LLC 10675 Sorrento Valley Road San Diego, CA 92121 Phone: 858-558-1120				Boring No:	L10
Sample Method: Hand Auger and Direct Push Drill Rig	Proj. Name:	Sears-Brea Mall			
	Proj. Number:	SIMON1801-001	Logged By:		Tyler Steimel
	Date Start:	4/3/2018	Depth to Water (ATD):		Not Encountered
	Date End:	4/5/2018	Boring Diameter:		4.0-Inches

Depth	Interval	Sample Information: Sample number	Sample Information: PID (PPM)	Sample Description & Classification	Boring Backfill Construction
0				**Poorly Graded SAND (SP) -** dense, dry, dark brown (7.5YR 3/3), 90% fine to medium grained sand, 10% gravel	← **Concrete**
1			0		
2			0.3	**Poorly Graded SAND with Silt (SP-SM)** - dense, dry, dark brown (7.5YR 3/3), 90% fine to medium grained sand, 10% silt	
3			0.2		
4			0.4		← **Hydrated Granular Bentonite**
5	X	L10-5	0.8		
6					
7					
8	X	L10-8	0	**Poorly Graded SAND (SP)** - dense, slightly moist, brown (7.5YR 4/3), 90% fine to medium grained sand, 10% gravel	
9					
10					
11					
12	X	L10-12	0		
13				BOTTOM OF BORING	
14					
15					
16					
17					
18					
19					
20					

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Apex Companies, LLC 10675 Sorrento Valley Road San Diego, CA 92121 Phone: 858-558-1120				Boring No:	L11
Sample Method: Hand Auger and Direct Push Drill Rig	Proj. Name:	Sears-Brea Mall			
	Proj. Number:	SIMON1801-001	Logged By:		Tyler Steimel
	Date Start:	4/3/2018	Depth to Water (ATD):		Not Encountered
	Date End:	4/5/2018	Boring Diameter:		4.0-Inches

Depth	Interval	Sample Information: Sample number	Sample Information: PID (PPM)	Sample Description & Classification	Boring Backfill Construction
0				**Poorly Graded SAND with Silt (SP-SM)** - dense, dry, light brown (2.5YR 7/3), 90% fine grained sand, 10% silt	Concrete
1			0		
2			0		
3	X	L11-3	0		
4			0		Hydrated Granular Bentonite
5			0		
6					
7	X	L11-7	0	**Well Graded SAND with Silt (SW-SM)** - dense, slightly moist, light brown (2.5YR 7/3), 90% sand, 10% silt	
8					
9	X	L11-9	0	**Poorly Graded SAND with Silt (SP-SM)** - dense, slightly moist, brownish gray (10YR 6/2), 90% fine grained sand, 10% silt	
10				**Poorly Graded SAND with Silt (SP-SM)** - dense, slightly moist, brown (7.5YR 4/3), 90% fine grained sand, 10% silt	
11					
12	X	L11-12	0		
13				BOTTOM OF BORING	
14					
15					
16					
17					
18					
19					
20					

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Apex Companies, LLC 10675 Sorrento Valley Road San Diego, CA 92121 Phone: 858-558-1120				Boring No:	L12
Sample Method: Hand Auger and Direct Push Drill Rig	Proj. Name:	Sears-Brea Mall			
	Proj. Number:	SIMON1801-001	Logged By:		Tyler Steimel
	Date Start:	4/3/2018	Depth to Water (ATD):		Not Encountered
	Date End:	4/5/2018	Boring Diameter:		4.0-Inches

Depth	Interval	Sample Information: Sample number	Sample Information: PID (PPM)	Sample Description & Classification	Boring Backfill Construction
0				**Poorly Graded SAND with Silt (SP-SM) -** dense, slightly moist, dark brown (7.5YR 3/3), 90% fine to medium grained sand, 10% silt	← **Concrete**
1	X	L12-1	0		
2			0		
3			0		
4			0		← **Hydrated Granular Bentonite**
5			0		
6					
7	X	L12-7	0	**Well Graded SAND with Silt (SW-SM) -** dense, dry, light brown (2.5YR 7/3), 90% sand, 10% silt	
8					
9					
10					
11					
12	X	L12-12	0		
13				BOTTOM OF BORING	
14					
15					
16					
17					
18					
19					
20					

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Apex Companies, LLC 10675 Sorrento Valley Road San Diego, CA 92121 Phone: 858-558-1120			Boring No:	L13
Sample Method: Hand Auger and Direct Push Drill Rig	Proj. Name:	Sears-Brea Mall		
	Proj. Number:	SIMON1801-001	Logged By:	Tyler Steimel
	Date Start:	4/3/2018	Depth to Water (ATD):	Not Encountered
	Date End:	4/5/2018	Boring Diameter:	4.0-Inches

Depth	Interval	Sample Information: Sample number	Sample Information: PID (PPM)	Sample Description & Classification	Boring Backfill Construction
0				**Silty SAND (SM) -** dense, dry, very pale brown (10YR 8/8), 70% fine to medium grained sand, 30% silt	← **Concrete** ← **Hydrated Granular Bentonite**
1			0		
2	X	L13-2	0		
3			0		
4			0		
5			0		
6					
7					
8					
9	X	L13-9	0	**Silty SAND (SM)** - dense, slightly moist, very pale brown (10YR 8/8), 70% fine to medium grained sand, 30% silt	
10					
11					
12	X	L13-12	0		
13				BOTTOM OF BORING	
14					
15					
16					
17					
18					
19					
20					

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Apex Companies, LLC 10675 Sorrento Valley Road San Diego, CA 92121 Phone: 858-558-1120			Boring No:	L14
Sample Method: Hand Auger and Direct Push Drill Rig	Proj. Name:	Sears-Brea Mall		
	Proj. Number:	SIMON1801-001	Logged By:	Tyler Steimel
	Date Start:	4/3/2018	Depth to Water (ATD):	Not Encountered
	Date End:	4/5/2018	Boring Diameter:	4.0-Inches

Depth	Interval	Sample Information: Sample number	Sample Information: PID (PPM)	Sample Description & Classification	Boring Backfill Construction
0				**Silty SAND (SM) -** dense, dry, very pale brown (10YR 8/8), 70% fine to medium grained sand, 30% silt	← **Concrete**
1			0		
2			0		
3	X	L14-3	0		
4			0		← **Hydrated Granular Bentonite**
5			0		
6				**Silty SAND (SM)** - dense, slightly moist, brown (7.5YR 4/3), 70% fine to medium grained sand, 30% silt	
7					
8	X	L14-8	0		
9					
10					
11					
12	X	L14-12	0		
13				BOTTOM OF BORING	
14					
15					
16					
17					
18					
19					
20					

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Apex Companies, LLC 10675 Sorrento Valley Road San Diego, CA 92121 Phone: 858-558-1120			Boring No:	L15
Sample Method: Hand Auger and Direct Push Drill Rig	Proj. Name:	Sears-Brea Mall		
	Proj. Number:	SIMON1801-001	Logged By:	Tyler Steimel
	Date Start:	4/3/2018	Depth to Water (ATD):	Not Encountered
	Date End:	4/5/2018	Boring Diameter:	4.0-Inches

Depth	Interval	Sample Information: Sample number	Sample Information: PID (PPM)	Sample Description & Classification	Boring Backfill Construction
0				**Silty SAND (SM) -** dense, dry, dark brown (7.5YR 3/3), 80% fine grained sand, 20% silt	← **Concrete**
1	X	L15-1	0		
2	X	L15-2	0		
3			0		
4			0		← **Hydrated Granular Bentonite**
5			0		
6					
7	X	L15-7	0	**Silty SAND (SM)** - dense, slightly moist, brown (7.5YR 4/3), 80% fine to medium grained sand, 20% silt	
8					
9					
10					
11					
12	X	L15-12	0		
13				BOTTOM OF BORING	
14					
15					
16					
17					
18					
19					
20					

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Apex Companies, LLC 10675 Sorrento Valley Road San Diego, CA 92121 Phone: 858-558-1120			Boring No:	L16
Sample Method: Hand Auger and Direct Push Drill Rig	Proj. Name:	Sears-Brea Mall		
	Proj. Number:	SIMON1801-001	Logged By:	Tyler Steimel
	Date Start:	4/3/2018	Depth to Water (ATD):	Not Encountered
	Date End:	4/5/2018	Boring Diameter:	4.0-Inches

Depth	Interval	Sample Information: Sample number	Sample Information: PID (PPM)	Sample Description & Classification	Boring Backfill Construction
0				**Silty SAND (SM) -** dense, dry, light brown (7.5YR 6/4), 80% fine grained sand, 20% silt	← **Concrete**
1			0		
2	X	L16-2	0		
3			0		
4			0		← **Hydrated Granular Bentonite**
5			0		
6				**Silty SAND (SM)** - dense, slightly moist, light brown (7.5YR 6/4), 80% fine to medium grained sand, 20% silt	
7	X	L16-7	0		
8					
9					
10					
11					
12	X	L16-12	0		
13				BOTTOM OF BORING	
14					
15					
16					
17					
18					
19					
20					

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Apex Companies, LLC 10675 Sorrento Valley Road San Diego, CA 92121 Phone: 858-558-1120			Boring No:	D1
Sample Method: Hand Auger and Direct Push Drill Rig	Proj. Name:	Sears-Brea Mall		
	Proj. Number:	SIMON1801-001	Logged By:	Tyler Steimel
	Date Start:	4/3/2018	Depth to Water (ATD):	Not Encountered
	Date End:	4/5/2018	Boring Diameter:	4.0-Inches

Depth	Interval	Sample Information: Sample number	Sample Information: PID (PPM)	Sample Description & Classification	Boring Backfill Construction
0				**Silty SAND (SM)** - dense, dry, brownish gray (10YR 6/2), 75% fine grained sand, 25% silt	← **Concrete**
1			0		
2	X	D1-2	0	**Silty SAND (SM)** - dense, dry, brown (7.5YR 4/3), 75% fine grained sand, 25% silt	← **Hydrated Granular Bentonite**
3			0.2		
4	X	D1-4	0.2		
5			0	BOTTOM OF BORING	
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

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Apex Companies, LLC 10675 Sorrento Valley Road San Diego, CA 92121 Phone: 858-558-1120			Boring No:	D2
Sample Method: Hand Auger and Direct Push Drill Rig	Proj. Name:	Sears-Brea Mall		
	Proj. Number:	SIMON1801-001	Logged By:	Tyler Steimel
	Date Start:	4/3/2018	Depth to Water (ATD):	Not Encountered
	Date End:	4/5/2018	Boring Diameter:	4.0-Inches

Depth	Interval	Sample Information: Sample number	Sample Information: PID (PPM)	Sample Description & Classification	Boring Backfill Construction
0				**Silty SAND (SM)** - dense, dry, light brown (7.5YR 6/4), 75% fine to medium grained sand, 25% silt	Concrete
1	X	D2-1	0.1		
2			0		Hydrated Granular Bentonite
3			0.3		
4	X	D2-4	0.3		
5				BOTTOM OF BORING	
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

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Apex Companies, LLC 10675 Sorrento Valley Road San Diego, CA 92121 Phone: 858-558-1120			Boring No:	D3
Sample Method: Hand Auger and Direct Push Drill Rig	Proj. Name:	Sears-Brea Mall		
	Proj. Number:	SIMON1801-001	Logged By:	Tyler Steimel
	Date Start:	4/3/2018	Depth to Water (ATD):	Not Encountered
	Date End:	4/5/2018	Boring Diameter:	4.0-Inches

Depth	Interval	Sample Information: Sample number	Sample Information: PID (PPM)	Sample Description & Classification	Boring Backfill Construction
0				**Silty SAND (SM) -** dense, dry, light brown (7.5YR 6/4), 75% fine to medium grained sand, 25% silt	Concrete
1	X	D4-1	0		
2			0		Hydrated Granular Bentonite
3			0		
4	X	D4-4	0		
5				BOTTOM OF BORING	
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

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Apex Companies, LLC 10675 Sorrento Valley Road San Diego, CA 92121 Phone: 858-558-1120			Boring No:	D4
Sample Method: Hand Auger and Direct Push Drill Rig	Proj. Name:	Sears-Brea Mall		
	Proj. Number:	SIMON1801-001	Logged By:	Tyler Steimel
	Date Start:	4/3/2018	Depth to Water (ATD):	Not Encountered
	Date End:	4/5/2018	Boring Diameter:	4.0-Inches

Depth	Interval	Sample Information: Sample number	Sample Information: PID (PPM)	Sample Description & Classification	Boring Backfill Construction
0				**Silty SAND (SM) -** dense, dry, brown (7.5YR 4/4), 80% fine to medium grained sand, 20% silt	**Concrete**
1	X	D4-1	0		
2			0		**Hydrated Granular Bentonite**
3			0		
4	X	D4-4	0		
5				BOTTOM OF BORING	
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

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Apex Companies, LLC 10675 Sorrento Valley Road San Diego, CA 92121 Phone: 858-558-1120			Boring No:	D5
Sample Method: Hand Auger and Direct Push Drill Rig	Proj. Name:	Sears-Brea Mall		
	Proj. Number:	SIMON1801-001	Logged By:	Tyler Steimel
	Date Start:	4/3/2018	Depth to Water (ATD):	Not Encountered
	Date End:	4/5/2018	Boring Diameter:	4.0-Inches

Depth	Interval	Sample Information: Sample number	Sample Information: PID (PPM)	Sample Description & Classification	Boring Backfill Construction
0				**Silty SAND (SM) -** dense, dry, light brown (7.5YR 6/4), 75% fine to medium grained sand, 25% silt	Concrete
1	X	D5-1	0		
2			0		Hydrated Granular Bentonite
3			0		
4	X	D5-4	0		
5				BOTTOM OF BORING	
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

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Apex Companies, LLC 10675 Sorrento Valley Road San Diego, CA 92121 Phone: 858-558-1120			Boring No:	D6
Sample Method: Hand Auger and Direct Push Drill Rig	Proj. Name:	Sears-Brea Mall		
	Proj. Number:	SIMON1801-001	Logged By:	Tyler Steimel
	Date Start:	4/3/2018	Depth to Water (ATD):	Not Encountered
	Date End:	4/5/2018	Boring Diameter:	4.0-Inches

Depth	Interval	Sample Information: Sample number	Sample Information: PID (PPM)	Sample Description & Classification	Boring Backfill Construction
0				**Silty SAND (SM) -** dense, dry, reddish brown (2.5YR 4/4), 75% fine grained sand, 25% silt	**Concrete**
1	X	D6-1	0.1		
2			0	**Silty SAND (SM)** - dense, dry, light brown (7.5YR 6/4), 75% fine to medium grained sand, 25% silt	**Hydrated Granular Bentonite**
3			0		
4	X	D6-4	0.2		
5				BOTTOM OF BORING	
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

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Apex Companies, LLC 10675 Sorrento Valley Road San Diego, CA 92121 Phone: 858-558-1120			Boring No:	D7
Sample Method: Hand Auger and Direct Push Drill Rig	Proj. Name:	Sears-Brea Mall		
	Proj. Number:	SIMON1801-001	Logged By:	Tyler Steimel
	Date Start:	4/3/2018	Depth to Water (ATD):	Not Encountered
	Date End:	4/5/2018	Boring Diameter:	4.0-Inches

Depth	Interval	Sample Information: Sample number	Sample Information: PID (PPM)	Sample Description & Classification	Boring Backfill Construction
0				**Silty SAND (SM)** - dense, dry, light brown (7.5YR 6/4), 40% fine to medium grained sand, 60% silt	Concrete
1			0		
2	X	D7-2	0		Hydrated Granular Bentonite
3				BOTTOM OF BORING (Boring kept caving in on itself past the 2 foot depth)	
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

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Apex Companies, LLC 10675 Sorrento Valley Road San Diego, CA 92121 Phone: 858-558-1120				Boring No:	OT1
Sample Method: Hand Auger and Direct Push Drill Rig	Proj. Name:	Sears-Brea Mall			
	Proj. Number:	SIMON1801-001	Logged By:		Tyler Steimel
	Date Start:	4/3/2018	Depth to Water (ATD):		Not Encountered
	Date End:	4/5/2018	Boring Diameter:		4.0-Inches

Depth	Interval	Sample Information: Sample number	Sample Information: PID (PPM)	Sample Description & Classification	Boring Backfill Construction
0				**Silty SAND (SM) -** dense, dry, dark brown (7.5YR 3/3), 85% fine grained sand, 15% silt	← **Concrete**
1	X	OT1-1	0		
2			0	**Silty SAND (SM)** - dense, dry, light brown (7.5YR 6/4), 85% fine to medium grained sand, 15% silt	
3			0		
4	X	OT1-4	0	**Silty SAND (SM)** - dense, dry, dark brown (7.5YR 3/3) with scattered black staining, 85% fine grained sand, 15% silt	← **Hydrated Granular Bentonite**
5			0	**Silty SAND (SM)** - dense, dry, light brown (7.5YR 6/4), 85% fine to medium grained sand, 15% silt	
6	X	OT1-6	0	**Poorly Graded SAND with Silt (SP-SM)** - dense, dry, dark brown (7.5YR 3/3), 90% fine to medium grained sand, 10% silt	
7					
8					
9	X	OT1-9	0	**Well Graded SAND with Silt (SW-SM)** - dense, slightly moist, dark brown (7.5YR 3/3), 90% sand, 10% silt	
10				**Silty SAND (SM)** - dense, slightly moist, brown (7.5YR 4/3), 85% fine to medium grained sand, 15% silt	
11					
12	X	OT1-12	0		
13					
14					
15					
16	X	OT1-16	0		
17				BOTTON OF BORING	
18					
19					
20					

DRAFT

Apex Companies, LLC 10675 Sorrento Valley Road San Diego, CA 92121 Phone: 858-558-1120				Boring No:	OW1
Sample Method: Hand Auger and Direct Push Drill Rig	Proj. Name:	Sears-Brea Mall			
	Proj. Number:	SIMON1801-001	Logged By:		Tyler Steimel
	Date Start:	4/3/2018	Depth to Water (ATD):		Not Encountered
	Date End:	4/5/2018	Boring Diameter:		4.0-Inches

Depth	Interval	Sample Information: Sample number	Sample Information: PID (PPM)	Sample Description & Classification	Boring Backfill Construction
0				**Silty SAND (SM) -** dense, dry, brownish gray (10YR 6/2), 75% fine to medium grained sand, 25% silt	Concrete
1	X	OW1-1	16.8		
2			1.6		
3	X	OW1-3	1.7		
4			0.8		Hydrated Granular Bentonite
5			0		
6	X	OW1-6	0		
7				**Silty SAND (SM)** - dense, slightly moist, brown (7.5YR 4/3), 75% fine to medium grained sand, 25% silt	
8					
9	X	OW1-9	0		
10					
11					
12	X	OW1-12	0		
13				BOTTOM OF BORING	
14					
15					
16					
17					
18					
19					
20					

DRAFT

Apex Companies, LLC 10675 Sorrento Valley Road San Diego, CA 92121 Phone: 858-558-1120			Boring No:	OW2
Sample Method: Hand Auger and Direct Push Drill Rig	Proj. Name:	Sears-Brea Mall		
	Proj. Number:	SIMON1801-001	Logged By:	Tyler Steimel
	Date Start:	4/3/2018	Depth to Water (ATD):	Not Encountered
	Date End:	4/5/2018	Boring Diameter:	4.0-Inches

Depth	Interval	Sample Information: Sample number	Sample Information: PID (PPM)	Sample Description & Classification	Boring Backfill Construction
0				**Silty SAND (SM) -** dense, dry, brownish gray (10YR 6/2), 80% fine grained sand, 20% silt	← **Concrete**
1	X	OW2-1	16.0		
2	X	OW2-2	12.5		
3			2.2		
4			0.9		← **Hydrated Granular Bentonite**
5	X	OW2-5	1.1		
6				**Silty SAND (SM)** - dense, slightly moist, brown (7.5YR 4/3), 80% fine to medium grained sand, 20% silt	
7	X	OW2-7	0		
8					
9					
10	X	OW2-10	0	**Well Graded SAND with Silt (SW-SM)** - dense, slightly moist, dark brown (7.5YR 3/3), 90% sand, 10% silt	
11				**Silty SAND (SM)** - dense, slightly moist, brown (7.5YR 4/3), 80% fine grained sand, 20% silt	
12	X	OW2-12	0		
13				BOTTOM OF BORING	
14					
15					
16					
17					
18					
19					
20					

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Apex Companies, LLC 10675 Sorrento Valley Road San Diego, CA 92121 Phone: 858-558-1120				Boring No:	OW3
Sample Method: Hand Auger and Direct Push Drill Rig	Proj. Name:	Sears-Brea Mall			
	Proj. Number:	SIMON1801-001	Logged By:		Tyler Steimel
	Date Start:	4/3/2018	Depth to Water (ATD):		Not Encountered
	Date End:	4/5/2018	Boring Diameter:		4.0-Inches

Depth	Interval	Sample Information: Sample number	Sample Information: PID (PPM)	Sample Description & Classification	Boring Backfill Construction
0				**Silty SAND (SM) -** dense, slightly dry, brown (7.5YR 4/3), 80% fine to medium grained sand, 20% silt	Concrete
1			0		
2	X	OW3-2	0		
3			0		
4			0		Hydrated Granular Bentonite
5			0		
6					
7	X	OW3-7	0	**Well Graded SAND with Silt (SW-SM)** - dense, slightly moist, dark brown (7.5YR 3/3), 90% sand, 10% silt	
8					
9					
10					
11					
12	X	OW3-12	0		
13				BOTTOM OF BORING	
14					
15					
16					
17					
18					
19					
20					

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Apex Companies, LLC 10675 Sorrento Valley Road San Diego, CA 92121 Phone: 858-558-1120				Boring No:	OW4
Sample Method: Hand Auger and Direct Push Drill Rig	Proj. Name:	Sears-Brea Mall			
	Proj. Number:	SIMON1801-001	Logged By:		Tyler Steimel
	Date Start:	4/3/2018	Depth to Water (ATD):		Not Encountered
	Date End:	4/5/2018	Boring Diameter:		4.0-Inches

Depth	Interval	Sample Information: Sample number	Sample Information: PID (PPM)	Sample Description & Classification	Boring Backfill Construction
0				**Silty SAND (SM)** - dense, slightly dry, brown (7.5YR 4/3), 80% fine to medium grained sand, 20% silt	Concrete
1	X	OW4-1	0		
2			0		
3			0		
4			0		Hydrated Granular Bentonite
5			0		
6	X	OW4-6	0	**Well Graded SAND with Silt (SW-SM)** - dense, slightly moist, brown (7.5YR 4/3), 90% sand, 10% silt	
7					
8				**Silty SAND (SM)** - dense, slightly moist, brown (7.5YR 4/3), 80% fine to medium grained sand, 20% silt	
9					
10					
11					
12	X	OW4-12	0		
13				BOTTOM OF BORING	
14					
15					
16					
17					
18					
19					
20					

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Apex Companies, LLC 10675 Sorrento Valley Road San Diego, CA 92121 Phone: 858-558-1120			Boring No:	LS1
Sample Method: Hand Auger and Direct Push Drill Rig	Proj. Name:	Sears-Brea Mall		
	Proj. Number:	SIMON1801-001	Logged By:	Tyler Steimel
	Date Start:	4/3/2018	Depth to Water (ATD):	Not Encountered
	Date End:	4/5/2018	Boring Diameter:	4.0-Inches

Depth	Interval	Sample Information: Sample number	Sample Information: PID (PPM)	Sample Description & Classification	Boring Backfill Construction
0				**Silty SAND (SM)** - dense, slightly dry, dark brown (7.5YR 3/3), 80% fine to medium grained sand, 20% silt	Concrete
1			0		
2	X	LS1-2	0		Hydrated Granular Bentonite
3			0		
4			0		
5				BOTTOM OF BORING	
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

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APPENDIX B

LABORATORY REPORTS

DRAFT

Enthalpy Analytical, LLC
931 W. Barkley Ave - Orange, CA 92868
Tel: (714)771-6900 Fax: (714)538-1209
www.enthalpy.com
info-sc@enthalpy.com

MONTROSE ENVIRONMENTAL

Client: APEX
Address: 10675 Sorrento Valley Rd.
Suite 203
San Diego, CA 92121
Attn: Paul Garcia

Comments: Sears Brea Mall
3616-A1000-003

Lab Request: 401318
Report Date: 04/13/2018
Date Received: 04/03/2018
Client ID: 10359

This laboratory request covers the following listed samples which were analyzed for the parameters indicated on the attached Analytical Result Report. All analyses were conducted using the appropriate methods. Methods accredited by NELAC are indicated on the report. This cover letter is an integral part of the final report.

Sample #	Client Sample ID
401318-001	L5-5
401318-005	L6-8
401318-006	L7-5
401318-009	D7-2
401318-011	L8-2
401318-015	LSI-2
401318-017	FE-1
401318-018	SE-1

DRAFT

Thank you for the opportunity to be of service to your company. Please feel free to call if there are any questions regarding this report or if we can be of further service.

Diane M. Galvan

Report Review performed by: Diane Galvan, Project Manager

NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 60 days from date received.

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ACCREDITED IN ACCORDANCE WITH nelac

Matrix:	Solid	**Client:**	APEX	**Collector:**	
Sampled:	04/03/2018 09:56	**Site:**			
Sample #:	**401318-001**	**Client Sample #:**	L5-5	**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 8015B NELAC	Prep Method: EPA 5030					QCBatchID: QC1189772		
TPH Gasoline	ND	1	3	mg/Kg		04/05/18	EW	
Surrogate	*% Recovery*		*Limits*	*Notes*				
4-Bromofluorobenzene (SUR)	*105*		*60-140*					
Method: EPA 8015M	Prep Method: EPA 3580A					QCBatchID: QC1189962		
TPH Diesel	ND	1	10	mg/Kg	04/10/18	04/10/18	AJ	
TPH Motor Oil	ND	1	20	mg/Kg	04/10/18	04/10/18	AJ	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Triacontane (SUR)	*69*		*50-150*					
Method: EPA 8082 NELAC	Prep Method: EPA 3545					QCBatchID: QC1189759		
PCB-1016	ND	1	50	ug/Kg	04/04/18	04/06/18		
PCB-1221	ND	1	50	ug/Kg	04/04/18	04/06/18		
PCB-1232	ND	1	50	ug/Kg	04/04/18	04/06/18		
PCB-1242	ND	1	50	ug/Kg	04/04/18	04/06/18		
PCB-1248	ND	1	50	ug/Kg	04/04/18	04/06/18		
PCB-1254	ND	1	50	ug/Kg	04/04/18	04/06/18		
PCB-1260	ND	1	50	ug/Kg	04/04/18	04/06/18		
PCB-1262	ND	1	50	ug/Kg	04/04/18	04/06/18		
PCB-1268	ND	1	50	ug/Kg	04/04/18	04/06/18		
Surrogate	*% Recovery*		*Limits*	*Notes*				
Decachlorobiphenyl DCB (SUR)	*65*		*50-150*					

Matrix:	Solid	**Client:**	APEX	**Collector:**	
Sampled:	04/03/2018 13:07	**Site:**			
Sample #:	**401318-005**	**Client Sample #:**	L6-8	**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 8015B NELAC	Prep Method: EPA 5030					QCBatchID: QC1189772		
TPH Gasoline	ND	1	3	mg/Kg		04/05/18	EW	
Surrogate	*% Recovery*		*Limits*	*Notes*				
4-Bromofluorobenzene (SUR)	*105*		*60-140*					
Method: EPA 8015M	Prep Method: EPA 3580A					QCBatchID: QC1189962		
TPH Diesel	ND	1	10	mg/Kg	04/10/18	04/10/18	AJ	
TPH Motor Oil	ND	1	20	mg/Kg	04/10/18	04/10/18	AJ	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Triacontane (SUR)	*64*		*50-150*					
Method: EPA 8082 NELAC	Prep Method: EPA 3545					QCBatchID: QC1189759		
PCB-1016	ND	1	50	ug/Kg	04/04/18	04/06/18		
PCB-1221	ND	1	50	ug/Kg	04/04/18	04/06/18		
PCB-1232	ND	1	50	ug/Kg	04/04/18	04/06/18		
PCB-1242	ND	1	50	ug/Kg	04/04/18	04/06/18		
PCB-1248	ND	1	50	ug/Kg	04/04/18	04/06/18		
PCB-1254	ND	1	50	ug/Kg	04/04/18	04/06/18		
PCB-1260	ND	1	50	ug/Kg	04/04/18	04/06/18		
PCB-1262	ND	1	50	ug/Kg	04/04/18	04/06/18		
PCB-1268	ND	1	50	ug/Kg	04/04/18	04/06/18		
Surrogate	*% Recovery*		*Limits*	*Notes*				
Decachlorobiphenyl DCB (SUR)	*72*		*50-150*					

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Matrix:	Solid	**Client:**	APEX	**Collector:**	
Sampled:	04/03/2018 13:22	**Site:**			
Sample #:	**401318-006**	**Client Sample #:**	L7-5	**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 8015B *NELAC* Prep Method: EPA 5030						QCBatchID: QC1189772		
TPH Gasoline	ND	1	3	mg/Kg		04/05/18	EW	
Surrogate	*% Recovery*		*Limits*	*Notes*				
4-Bromofluorobenzene (SUR)	*105*		*60-140*					
Method: EPA 8015M Prep Method: EPA 3580A						QCBatchID: QC1189962		
TPH Diesel	**12**	1	10	mg/Kg	04/10/18	04/10/18	AJ	
TPH Motor Oil	ND	1	20	mg/Kg	04/10/18	04/10/18	AJ	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Triacontane (SUR)	*70*		*50-150*					
Method: EPA 8082 *NELAC* Prep Method: EPA 3545						QCBatchID: QC1189942		
PCB-1016	ND	1	50	ug/Kg	04/10/18	04/11/18		
PCB-1221	ND	1	50	ug/Kg	04/10/18	04/11/18		
PCB-1232	ND	1	50	ug/Kg	04/10/18	04/11/18		
PCB-1242	ND	1	50	ug/Kg	04/10/18	04/11/18		
PCB-1248	ND	1	50	ug/Kg	04/10/18	04/11/18		
PCB-1254	ND	1	50	ug/Kg	04/10/18	04/11/18		
PCB-1260	ND	1	50	ug/Kg	04/10/18	04/11/18		
PCB-1262	ND	1	50	ug/Kg	04/10/18	04/11/18		
PCB-1268	ND	1	50	ug/Kg	04/10/18	04/11/18		
Surrogate	*% Recovery*		*Limits*	*Notes*				
Decachlorobiphenyl DCB (SUR)	*54*		*50-150*					

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Matrix:	Solid	**Client:**	APEX	**Collector:**	
Sampled:	04/03/2018 12:24	**Site:**			
Sample #:	**401318-009**	**Client Sample #:**	D7-2	**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 8015B NELAC	Prep Method: EPA 5030					QCBatchID: QC1189772		
TPH Gasoline	ND	1	3	mg/Kg		04/05/18	EW	
Surrogate	*% Recovery*		*Limits*	*Notes*				
4-Bromofluorobenzene (SUR)	*100*		*60-140*					
Method: EPA 8015M	Prep Method: EPA 3580A					QCBatchID: QC1189962		
TPH Diesel	**11**	1	10	mg/Kg	04/10/18	04/10/18	AJ	
TPH Motor Oil	ND	1	20	mg/Kg	04/10/18	04/10/18	AJ	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Triacontane (SUR)	*70*		*50-150*					
Method: EPA 8082 NELAC	Prep Method: EPA 3545					QCBatchID: QC1189759		
PCB-1016	ND	1	50	ug/Kg	04/04/18	04/06/18		
PCB-1221	ND	1	50	ug/Kg	04/04/18	04/06/18		
PCB-1232	ND	1	50	ug/Kg	04/04/18	04/06/18		
PCB-1242	ND	1	50	ug/Kg	04/04/18	04/06/18		
PCB-1248	ND	1	50	ug/Kg	04/04/18	04/06/18		
PCB-1254	ND	1	50	ug/Kg	04/04/18	04/06/18		
PCB-1260	ND	1	50	ug/Kg	04/04/18	04/06/18		
PCB-1262	ND	1	50	ug/Kg	04/04/18	04/06/18		
PCB-1268	ND	1	50	ug/Kg	04/04/18	04/06/18		
Surrogate	*% Recovery*		*Limits*	*Notes*				
Decachlorobiphenyl DCB (SUR)	*80*		*50-150*					
Method: EPA 8260B NELAC	Prep Method: EPA 5035A					QCBatchID: QC1189710		
1,1,1,2-Tetrachloroethane	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
1,1,1-Trichloroethane	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
1,1,2,2-Tetrachloroethane	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
1,1,2-Trichloroethane	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
1,1,2-Trichlorotrifluoroethane	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
1,1-Dichloroethane	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
1,1-Dichloroethene	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
1,1-Dichloropropene	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
1,2,3-Trichlorobenzene	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
1,2,3-Trichloropropane	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
1,2,4-Trichlorobenzene	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
1,2,4-Trimethylbenzene	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
1,2-Dibromo-3-chloropropane	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
1,2-Dibromoethane	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
1,2-Dichlorobenzene	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
1,2-Dichloroethane	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
1,2-Dichloropropane	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
1,3,5-Trimethylbenzene	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
1,3-Dichlorobenzene	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
1,3-Dichloropropane	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
1,4-Dichlorobenzene	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
2,2-Dichloropropane	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
2-Butanone (MEK)	ND	1.11	111	ug/Kg		04/04/18	ZZ	
2-Chloroethyl Vinyl Ether	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
2-Chlorotoluene	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
4-Chlorotoluene	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
4-Isopropyltoluene	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
4-Methyl-2-pentanone (MIBK)	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
Acetone	ND	1.11	111	ug/Kg		04/04/18	ZZ	
Allyl Chloride	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	

DRAFT

Matrix: Solid	**Client:** APEX	**Collector:**	
Sampled: 04/03/2018 12:24	**Site:**		
Sample #: 401318-009	**Client Sample #:** D7-2	**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Benzene	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
Bromobenzene	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
Bromochloromethane	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
Bromodichloromethane	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
Bromoform	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
Bromomethane	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
Carbon Tetrachloride	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
Chlorobenzene	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
Chlorodibromomethane	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
Chloroethane	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
Chloroform	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
Chloromethane	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
cis-1,2-Dichloroethene	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
cis-1,3-dichloropropene	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
cis-1,4-dichloro-2-butene	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
Dibromomethane	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
Dichlorodifluoromethane	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
Di-isopropyl ether (DIPE)	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
Ethylbenzene	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
Ethyl-tertbutylether (ETBE)	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
Hexachlorobutadiene	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
Isopropylbenzene	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
m and p-Xylene	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
Methylene chloride	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
Methyl-t-butyl Ether (MTBE)	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
Naphthalene	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
N-butylbenzene	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
N-propylbenzene	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
o-Xylene	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
Sec-butylbenzene	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
Styrene	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
t-Butyl alcohol (TBA)	ND	1.11	11.1	ug/Kg		04/04/18	ZZ	
Tert-amylmethylether (TAME)	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
Tert-butylbenzene	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
Tetrachloroethene	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
Toluene	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
trans-1,2-dichloroethene	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
trans-1,3-dichloropropene	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
trans-1,4-dichloro-2-butene	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
Trichloroethene	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
Trichlorofluoromethane	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
Vinyl Chloride	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	
Xylenes (Total)	ND	1.11	5.55	ug/Kg		04/04/18	ZZ	

Surrogate	*% Recovery*	*Limits*	*Notes*
1,2-Dichloroethane-d4 (SUR)	*94*	*70-145*	
4-Bromofluorobenzene (SUR)	*96*	*70-145*	
Dibromofluoromethane (SUR)	*96*	*70-145*	
Toluene-d8 (SUR)	*97*	*70-145*	

Method: EPA 8270CM Prep Method: EPA 3545 QCBatchID: QC1189712

1-Methylnaphthalene	ND	1	10	ug/Kg	04/04/18	04/04/18	DP	
2-Methylnaphthalene	ND	1	10	ug/Kg	04/04/18	04/04/18	DP	
Acenaphthene	ND	1	10	ug/Kg	04/04/18	04/04/18	DP	
Acenaphthylene	ND	1	10	ug/Kg	04/04/18	04/04/18	DP	

DRAFT

Matrix:	Solid	**Client:**	APEX	**Collector:**	
Sampled:	04/03/2018 12:24	**Site:**			
Sample #:	**401318-009**	**Client Sample #:**	D7-2	**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Anthracene	ND	1	10	ug/Kg	04/04/18	04/04/18	DP	
Benz(a)anthracene	ND	1	10	ug/Kg	04/04/18	04/04/18	DP	
Benzo(a)pyrene	ND	1	10	ug/Kg	04/04/18	04/04/18	DP	
Benzo(b)fluoranthene	ND	1	10	ug/Kg	04/04/18	04/04/18	DP	
Benzo(g,h,i)perylene	ND	1	10	ug/Kg	04/04/18	04/04/18	DP	L
Benzo(k)fluoranthene	ND	1	10	ug/Kg	04/04/18	04/04/18	DP	
Chrysene	ND	1	10	ug/Kg	04/04/18	04/04/18	DP	
Dibenz(a,h)anthracene	ND	1	10	ug/Kg	04/04/18	04/04/18	DP	
Fluoranthene	ND	1	10	ug/Kg	04/04/18	04/04/18	DP	
Fluorene	ND	1	10	ug/Kg	04/04/18	04/04/18	DP	
Indeno(1,2,3-cd)pyrene	ND	1	10	ug/Kg	04/04/18	04/04/18	DP	
Naphthalene	ND	1	10	ug/Kg	04/04/18	04/04/18	DP	
Phenanthrene	ND	1	10	ug/Kg	04/04/18	04/04/18	DP	
Pyrene	ND	1	10	ug/Kg	04/04/18	04/04/18	DP	

Surrogate	*% Recovery*	*Limits*	*Notes*
2-Fluorobiphenyl (SUR)	*59*	*30-120*	
Nitrobenzene-d5 (SUR)	*51*	*27-125*	
p-Terphenyl (SUR)	*51*	*33-155*	

Matrix:	Solid	**Client:**	APEX	**Collector:**	
Sampled:	04/03/2018 13:27	**Site:**			
Sample #:	**401318-011**	**Client Sample #:**	L8-2	**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 8015B *NELAC* Prep Method: EPA 5030						QCBatchID:		QC1189772
TPH Gasoline	ND	1	3	mg/Kg		04/05/18	EW	

Surrogate	*% Recovery*	*Limits*	*Notes*
4-Bromofluorobenzene (SUR)	*105*	*60-140*	

Method: EPA 8015M Prep Method: EPA 3580A						QCBatchID:		QC1189962
TPH Diesel	ND	1	10	mg/Kg	04/10/18	04/10/18	AJ	
TPH Motor Oil	ND	1	20	mg/Kg	04/10/18	04/10/18	AJ	

Surrogate	*% Recovery*	*Limits*	*Notes*
Triacontane (SUR)	*69*	*50-150*	

Method: EPA 8082 *NELAC* Prep Method: EPA 3545						QCBatchID:		QC1189759
PCB-1016	ND	1	50	ug/Kg	04/04/18	04/06/18		
PCB-1221	ND	1	50	ug/Kg	04/04/18	04/06/18		
PCB-1232	ND	1	50	ug/Kg	04/04/18	04/06/18		
PCB-1242	ND	1	50	ug/Kg	04/04/18	04/06/18		
PCB-1248	ND	1	50	ug/Kg	04/04/18	04/06/18		
PCB-1254	ND	1	50	ug/Kg	04/04/18	04/06/18		
PCB-1260	ND	1	50	ug/Kg	04/04/18	04/06/18		
PCB-1262	ND	1	50	ug/Kg	04/04/18	04/06/18		
PCB-1268	ND	1	50	ug/Kg	04/04/18	04/06/18		

Surrogate	*% Recovery*	*Limits*	*Notes*
Decachlorobiphenyl DCB (SUR)	*68*	*50-150*	

DRAFT

Matrix:	Solid	**Client:**	APEX	**Collector:**	
Sampled:	04/03/2018 15:40	**Site:**			
Sample #:	**401318-015**	**Client Sample #:**	LSI-2	**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 8015B NELAC	Prep Method: EPA 5030					QCBatchID: QC1189772		
TPH Gasoline	ND	1	3	mg/Kg		04/05/18	EW	

Surrogate	*% Recovery*	*Limits*	*Notes*
4-Bromofluorobenzene (SUR)	*100*	*60-140*	

Method: EPA 8015M	Prep Method: EPA 3580A					QCBatchID: QC1189962		
TPH Diesel	ND	1	10	mg/Kg	04/10/18	04/10/18	AJ	
TPH Motor Oil	ND	1	20	mg/Kg	04/10/18	04/10/18	AJ	

Surrogate	*% Recovery*	*Limits*	*Notes*
Triacontane (SUR)	*66*	*50-150*	

Method: EPA 8260B NELAC	Prep Method: EPA 5035A					QCBatchID: QC1189710		
1,1,1,2-Tetrachloroethane	ND	1.25	6.25	ug/Kg		04/04/18	ZZ	
Benzene	ND	1.25	6.25	ug/Kg		04/04/18	ZZ	
Ethylbenzene	ND	1.25	6.25	ug/Kg		04/04/18	ZZ	
Methyl-t-butyl Ether (MTBE)	ND	1.25	6.25	ug/Kg		04/04/18	ZZ	
Toluene	ND	1.25	6.25	ug/Kg		04/04/18	ZZ	
Xylenes (Total)	ND	1.25	6.25	ug/Kg		04/04/18	ZZ	

Surrogate	*% Recovery*	*Limits*	*Notes*
1,2-Dichloroethane-d4 (SUR)	*96*	*70-145*	
4-Bromofluorobenzene (SUR)	*98*	*70-145*	
Dibromofluoromethane (SUR)	*97*	*70-145*	
Toluene-d8 (SUR)	*97*	*70-145*	

Matrix:	Water	**Client:**	APEX	**Collector:**	
Sampled:	04/03/2018 13:40	**Site:**			
Sample #:	**401318-017**	**Client Sample #:**	FE-1	**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 8082 NELAC	Prep Method: EPA 3510C					QCBatchID: QC1190114		
PCB-1016	ND	10	5	ug/L		04/12/18		
PCB-1221	ND	10	5	ug/L		04/12/18		
PCB-1232	ND	10	5	ug/L		04/12/18		
PCB-1242	ND	10	5	ug/L		04/12/18		
PCB-1248	ND	10	5	ug/L		04/12/18		
PCB-1254	ND	10	5	ug/L		04/12/18		
PCB-1260	ND	10	5	ug/L		04/12/18		
PCB-1262	ND	10	5	ug/L		04/12/18		
PCB-1268	ND	10	5	ug/L		04/12/18		

Surrogate	*% Recovery*	*Limits*	*Notes*
Decachlorobiphenyl DCB (SUR)	*76*	*50-150*	

DRAFT

Matrix:	Water	**Client:**	APEX	**Collector:**	
Sampled:	04/03/2018 13:50	**Site:**			
Sample #:	**401318-018**	**Client Sample #:**	SE-1	**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 8082 *NELAC*	Prep Method: EPA 3510C					QCBatchID: QC1190114		
PCB-1016	ND	10	5	ug/L		04/12/18		
PCB-1221	ND	10	5	ug/L		04/12/18		
PCB-1232	ND	10	5	ug/L		04/12/18		
PCB-1242	ND	10	5	ug/L		04/12/18		
PCB-1248	ND	10	5	ug/L		04/12/18		
PCB-1254	ND	10	5	ug/L		04/12/18		
PCB-1260	ND	10	5	ug/L		04/12/18		
PCB-1262	ND	10	5	ug/L		04/12/18		
PCB-1268	ND	10	5	ug/L		04/12/18		

Surrogate	*% Recovery*	*Limits*	*Notes*
Decachlorobiphenyl DCB (SUR)	*71*	*50-150*	

DRAFT

QCBatchID: QC1189710	Analyst: nicollez	Method: EPA 8260B
Matrix: Solid	Analyzed: 04/04/2018	Instrument: VOA-MS (group)

Blank Summary

Analyte	Blank Result	Units		RDL	Notes
QC1189710MB1					
1,1,1,2-Tetrachloroethane	ND	ug/Kg		5	
1,1,1-Trichloroethane	ND	ug/Kg		5	
1,1,2,2-Tetrachloroethane	ND	ug/Kg		5	
1,1,2-Trichloroethane	ND	ug/Kg		5	
1,1,2-Trichlorotrifluoroethane	ND	ug/Kg		5	
1,1-Dichloroethane	ND	ug/Kg		5	
1,1-Dichloroethene	ND	ug/Kg		5	
1,1-Dichloropropene	ND	ug/Kg		5	
1,2,3-Trichlorobenzene	ND	ug/Kg		5	
1,2,3-Trichloropropane	ND	ug/Kg		5	
1,2,4-Trichlorobenzene	ND	ug/Kg		5	
1,2,4-Trimethylbenzene	ND	ug/Kg		5	
1,2-Dibromo-3-chloropropane	ND	ug/Kg		5	
1,2-Dibromoethane	ND	ug/Kg		5	
1,2-Dichlorobenzene	ND	ug/Kg		5	
1,2-Dichloroethane	ND	ug/Kg		5	
1,2-Dichloropropane	ND	ug/Kg		5	
1,3,5-Trimethylbenzene	ND	ug/Kg		5	
1,3-Dichlorobenzene	ND	ug/Kg		5	
1,3-Dichloropropane	ND	ug/Kg		5	
1,4-Dichlorobenzene	ND	ug/Kg		5	
2,2-Dichloropropane	ND	ug/Kg		5	
2-Butanone (MEK)	ND	ug/Kg		100	
2-Chloroethyl Vinyl Ether	ND	ug/Kg		5	
2-Chlorotoluene	ND	ug/Kg		5	
4-Chlorotoluene	ND	ug/Kg		5	
4-Isopropyltoluene	ND	ug/Kg		5	
4-Methyl-2-pentanone (MIBK)	ND	ug/Kg		5	
Acetone	ND	ug/Kg		100	
Allyl Chloride	ND	ug/Kg		5	
Benzene	ND	ug/Kg		5	
Bromobenzene	ND	ug/Kg		5	
Bromochloromethane	ND	ug/Kg		5	
Bromodichloromethane	ND	ug/Kg		5	
Bromoform	ND	ug/Kg		5	
Bromomethane	ND	ug/Kg		5	
Carbon Tetrachloride	ND	ug/Kg		5	
Chlorobenzene	ND	ug/Kg		5	
Chlorodibromomethane	ND	ug/Kg		5	
Chloroethane	ND	ug/Kg		5	
Chloroform	ND	ug/Kg		5	
Chloromethane	ND	ug/Kg		5	
cis-1,2-Dichloroethene	ND	ug/Kg		5	
cis-1,3-dichloropropene	ND	ug/Kg		5	
cis-1,4-dichloro-2-butene	ND	ug/Kg		5	
Dibromomethane	ND	ug/Kg		5	
Dichlorodifluoromethane	ND	ug/Kg		5	
Di-isopropyl ether (DIPE)	ND	ug/Kg		5	
Ethylbenzene	ND	ug/Kg		5	
Ethyl-tertbutylether (ETBE)	ND	ug/Kg		5	
Hexachlorobutadiene	ND	ug/Kg		5	

DRAFT

QCBatchID: QC1189710	Analyst: nicollez	Method: EPA 8260B
Matrix: Solid	Analyzed: 04/04/2018	Instrument: VOA-MS (group)

Analyte	Blank Result	Units		RDL	Notes
QC1189710MB1					
Isopropylbenzene	ND	ug/Kg		5	
m and p-Xylene	ND	ug/Kg		5	
Methylene chloride	ND	ug/Kg		5	
Methyl-t-butyl Ether (MTBE)	ND	ug/Kg		5	
Naphthalene	ND	ug/Kg		5	
N-butylbenzene	ND	ug/Kg		5	
N-propylbenzene	ND	ug/Kg		5	
o-Xylene	ND	ug/Kg		5	
Sec-butylbenzene	ND	ug/Kg		5	
Styrene	ND	ug/Kg		5	
t-Butyl alcohol (TBA)	ND	ug/Kg		10	
Tert-amylmethylether (TAME)	ND	ug/Kg		5	
Tert-butylbenzene	ND	ug/Kg		5	
Tetrachloroethene	ND	ug/Kg		5	
Toluene	ND	ug/Kg		5	
trans-1,2-dichloroethene	ND	ug/Kg		5	
trans-1,3-dichloropropene	ND	ug/Kg		5	
trans-1,4-dichloro-2-butene	ND	ug/Kg		5	
Trichloroethene	ND	ug/Kg		5	
Trichlorofluoromethane	ND	ug/Kg		5	
Vinyl Chloride	ND	ug/Kg		5	
Xylenes (Total)	ND	ug/Kg		5	

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount LCS	Spike Amount LCSD	Spike Result LCS	Spike Result LCSD	Units	Recoveries LCS	Recoveries LCSD	RPD	Limits %Rec	Limits RPD	Notes
QC1189710LCS1, QC1189710LCSD1											
1,1-Dichloroethene	50	50	38	34	ug/Kg	76	68	11	59-172	22	
Benzene	50	50	44	41	ug/Kg	88	82	7	62-137	24	
Chlorobenzene	50	50	43	40	ug/Kg	86	80	7	60-133	24	
Methyl-t-butyl Ether (MTBE)	50	50	36	34	ug/Kg	72	68	6	62-137	21	
Toluene	50	50	42	39	ug/Kg	84	78	7	59-139	21	
Trichloroethene	50	50	44	41	ug/Kg	88	82	7	66-142	21	

DRAFT

QCBatchID: QC1189712	**Analyst:** Abanh	**Method:** EPA 8270CM	
Matrix: Solid	**Analyzed:** 04/04/2018	**Instrument:** SVOA-MS (group)	

Blank Summary

Analyte	Blank Result	Units		RDL	Notes
QC1189712MB1					
1-Methylnaphthalene	ND	ug/Kg		10	
2-Methylnaphthalene	ND	ug/Kg		10	
Acenaphthene	ND	ug/Kg		10	
Acenaphthylene	ND	ug/Kg		10	
Anthracene	ND	ug/Kg		10	
Benz(a)anthracene	ND	ug/Kg		10	
Benzo(a)pyrene	ND	ug/Kg		10	
Benzo(b)fluoranthene	ND	ug/Kg		10	
Benzo(g,h,i)perylene	ND	ug/Kg		10	
Benzo(k)fluoranthene	ND	ug/Kg		10	
Chrysene	ND	ug/Kg		10	
Dibenz(a,h)anthracene	ND	ug/Kg		10	
Fluoranthene	ND	ug/Kg		10	
Fluorene	ND	ug/Kg		10	
Indeno(1,2,3-cd)pyrene	ND	ug/Kg		10	
Naphthalene	ND	ug/Kg		10	
Phenanthrene	ND	ug/Kg		10	
Pyrene	ND	ug/Kg		10	

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount LCS	Spike Amount LCSD	Spike Result LCS	Spike Result LCSD	Units	Recoveries LCS	Recoveries LCSD	RPD	Limits %Rec	Limits RPD	Notes
QC1189712LCS1											
1-Methylnaphthalene	50		36		ug/Kg	72			70-130		
2-Methylnaphthalene	50		47		ug/Kg	94			70-130		
Acenaphthene	50		39		ug/Kg	78			70-130		
Acenaphthylene	50		49		ug/Kg	98			70-130		
Anthracene	50		41		ug/Kg	82			70-130		
Benz(a)anthracene	50		46		ug/Kg	92			70-130		
Benzo(a)pyrene	50		37		ug/Kg	74			70-130		
Benzo(b)fluoranthene	50		40		ug/Kg	80			70-130		
Benzo(g,h,i)perylene	50		34		ug/Kg	68			70-130		L
Benzo(k)fluoranthene	50		41		ug/Kg	82			70-130		
Chrysene	50		42		ug/Kg	84			70-130		
Dibenz(a,h)anthracene	50		37		ug/Kg	74			70-130		
Fluoranthene	50		46		ug/Kg	92			70-130		
Fluorene	50		45		ug/Kg	90			70-130		
Indeno(1,2,3-cd)pyrene	50		38		ug/Kg	76			70-130		
Naphthalene	50		46		ug/Kg	92			70-130		
Phenanthrene	50		43		ug/Kg	86			70-130		
Pyrene	50		45		ug/Kg	90			70-130		

Matrix Spike/Matrix Spike Duplicate Summary

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1189712MS1, QC1189712MSD1												**Source: 401318-009**
1-Methylnaphthalene	ND	50	50	30	31	ug/Kg	60	62	3.3	70-130	35	M
2-Methylnaphthalene	ND	50	50	42	40	ug/Kg	84	80	4.9	70-130	35	
Acenaphthene	ND	50	50	30	36	ug/Kg	60	72	18.2	70-130	35	M
Acenaphthylene	ND	50	50	30	36	ug/Kg	60	72	18.2	70-130	35	M
Anthracene	ND	50	50	35	40	ug/Kg	70	80	13.3	70-130	35	

DRAFT

QCBatchID: QC1189712 **Analyst:** Abanh **Method:** EPA 8270CM

Matrix: Solid **Analyzed:** 04/04/2018 **Instrument:** SVOA-MS (group)

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1189712MS1, QC1189712MSD1												**Source: 401318-009**
Benz(a)anthracene	ND	50	50	39	40	ug/Kg	78	80	2.5	70-130	35	
Benzo(a)pyrene	ND	50	50	49	44	ug/Kg	98	88	10.8	70-130	35	
Benzo(b)fluoranthene	ND	50	50	47	43	ug/Kg	94	86	8.9	70-130	35	
Benzo(g,h,i)perylene	ND	50	50	30	38	ug/Kg	60	76	23.5	70-130	35	M
Benzo(k)fluoranthene	ND	50	50	47	44	ug/Kg	94	88	6.6	70-130	35	
Chrysene	ND	50	50	40	41	ug/Kg	80	82	2.5	70-130	35	
Dibenz(a,h)anthracene	ND	50	50	32	40	ug/Kg	64	80	22.2	70-130	35	M
Fluoranthene	ND	50	50	40	41	ug/Kg	80	82	2.5	70-130	35	
Fluorene	ND	50	50	32	38	ug/Kg	64	76	17.1	70-130	35	M
Indeno(1,2,3-cd)pyrene	ND	50	50	33	42	ug/Kg	66	84	24.0	70-130	35	M
Naphthalene	ND	50	50	39	39	ug/Kg	78	78	0.0	70-130	35	
Phenanthrene	ND	50	50	35	40	ug/Kg	70	80	13.3	70-130	35	
Pyrene	ND	50	50	38	39	ug/Kg	76	78	2.6	70-130	35	

DRAFT

QCBatchID: QC1189759	Analyst: Abanh	Method: EPA 8082
Matrix: Solid	Analyzed: 04/04/2018	Instrument: SVOA-GC (group)

Blank Summary

Analyte	Blank Result	Units		RDL	Notes
QC1189759MB1					
PCB-1016	ND	ug/Kg		50	
PCB-1221	ND	ug/Kg		50	
PCB-1232	ND	ug/Kg		50	
PCB-1242	ND	ug/Kg		50	
PCB-1248	ND	ug/Kg		50	
PCB-1254	ND	ug/Kg		50	
PCB-1260	ND	ug/Kg		50	
PCB-1262	ND	ug/Kg		50	
PCB-1268	ND	ug/Kg		50	

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount		Spike Result		Units	Recoveries		RPD	Limits		Notes
	LCS	LCSD	LCS	LCSD		LCS	LCSD		%Rec	RPD	
QC1189759LCS1											
PCB-1016	500		470		ug/Kg	94			70-130		
PCB-1260	500		500		ug/Kg	100			70-130		

Matrix Spike/Matrix Spike Duplicate Summary

Analyte	Sample Amount	Spike Amount		Spike Result		Units	Recoveries		RPD	Limits		Notes
		MS	MSD	MS	MSD		MS	MSD		%Rec	RPD	
QC1189759MS1, QC1189759MSD1												**Source: 401231-017**
PCB-1016	ND	500	500	570	590	ug/Kg	114	118	3.4	70-130	20	
PCB-1260	ND	500	500	510	500	ug/Kg	102	100	2.0	70-130	20	

DRAFT

QCBatchID: QC1189772	**Analyst:** sandyw		**Method:** EPA 8015B		
Matrix: Solid	**Analyzed:** 04/05/2018		**Instrument:** VOA-GC (group)		

Blank Summary

Analyte	Blank Result	Units		RDL	Notes
QC1189772MB1					
TPH Gasoline	ND	mg/Kg		3	

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount LCS	Spike Amount LCSD	Spike Result LCS	Spike Result LCSD	Units	Recoveries LCS	Recoveries LCSD	RPD	Limits %Rec	Limits RPD	Notes
QC1189772LCS1											
TPH Gasoline	5		5.82		mg/Kg	116			70-130		

Matrix Spike/Matrix Spike Duplicate Summary

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1189772MS1, QC1189772MSD1												**Source: 401318-001**
TPH Gasoline	ND	5	5	5.76	5.64	mg/Kg	115	113	2.1	70-130	20	

DRAFT

QCBatchID:	**QC1189942**	**Analyst:**	Abanh	**Method:**	EPA 8082
Matrix:	Solid	**Analyzed:**	04/09/2018	**Instrument:**	SVOA-GC (group)

Blank Summary

Analyte	Blank Result	Units		RDL	Notes
QC1189942MB1					
PCB-1016	ND	ug/Kg		50	
PCB-1221	ND	ug/Kg		50	
PCB-1232	ND	ug/Kg		50	
PCB-1242	ND	ug/Kg		50	
PCB-1248	ND	ug/Kg		50	
PCB-1254	ND	ug/Kg		50	
PCB-1260	ND	ug/Kg		50	
PCB-1262	ND	ug/Kg		50	
PCB-1268	ND	ug/Kg		50	

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount LCS	Spike Amount LCSD	Spike Result LCS	Spike Result LCSD	Units	Recoveries LCS	Recoveries LCSD	RPD	Limits %Rec	Limits RPD	Notes
QC1189942LCS1											
PCB-1016	500		420		ug/Kg	84			70-130		
PCB-1260	500		490		ug/Kg	98			70-130		

Matrix Spike/Matrix Spike Duplicate Summary

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1189942MS1, QC1189942MSD1												**Source: 401318-006**
PCB-1016	ND	500	500	420	440	ug/Kg	84	88	4.7	70-130	20	
PCB-1260	ND	500	500	370	380	ug/Kg	74	76	2.7	70-130	20	

DRAFT

QCBatchID: QC1189962	Analyst: Jarriaga	Method: EPA 8015M
Matrix: Solid	Analyzed: 04/10/2018	Instrument: SVOA-GC (group)

Blank Summary

Analyte	Blank Result	Units		RDL	Notes	
QC1189962MB1						
TPH (C10 to C28)	ND	mg/Kg		10		
TPH (C13 to C22)	ND	mg/Kg		10		
TPH (C23 to C40)	ND	mg/Kg		20		
TPH (C28 to C40)	ND	mg/Kg		20		
TPH (C28 to C44)	ND	mg/Kg		20		
TPH (C8 to C10)	ND	mg/Kg		10		
TPH Diesel	ND	mg/Kg		10		
TPH Motor Oil	ND	mg/Kg		20		

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount LCS	Spike Amount LCSD	Spike Result LCS	Spike Result LCSD	Units	Recoveries LCS	Recoveries LCSD	RPD	Limits %Rec	Limits RPD	Notes
QC1189962LCS1											
TPH (C10 to C28)	250		220		mg/Kg	88			70-130		

Matrix Spike/Matrix Spike Duplicate Summary

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1189962MS1, QC1189962MSD1												**Source: 401318-001**
TPH (C10 to C28)	ND	250	250	260	260	mg/Kg	104		0.0	70-130	20	

DRAFT

QCBatchID: QC1190114	Analyst: MSolanki	Method: EPA 8082
Matrix: Water	Analyzed: 04/13/2018	Instrument: SVOA-GC (group)

Blank Summary

Analyte	Blank Result	Units		RDL	Notes
QC1190114MB1					
PCB-1016	ND	ug/L		0.5	
PCB-1221	ND	ug/L		0.5	
PCB-1232	ND	ug/L		0.5	
PCB-1242	ND	ug/L		0.5	
PCB-1248	ND	ug/L		0.5	
PCB-1254	ND	ug/L		0.5	
PCB-1260	ND	ug/L		0.5	
PCB-1262	ND	ug/L		0.5	
PCB-1268	ND	ug/L		0.5	

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount		Spike Result		Units	Recoveries		RPD	Limits		Notes
	LCS	LCSD	LCS	LCSD		LCS	LCSD		%Rec	RPD	
QC1190114LCS1											
PCB-1016	500		520		ug/L	104			70-130		
PCB-1260	500		510		ug/L	102			70-130		

Matrix Spike/Matrix Spike Duplicate Summary

Analyte	Sample Amount	Spike Amount		Spike Result		Units	Recoveries		RPD	Limits		Notes
		MS	MSD	MS	MSD		MS	MSD		%Rec	RPD	
QC1190114MS1, QC1190114MSD1												**Source: 401318-017**
PCB-1016	ND	500	500	530	520	ug/L	106	104	1.9	70-130	20	
PCB-1260	ND	500	500	470	470	ug/L	94	94	0.0	70-130	20	

DRAFT

Data Qualifiers and Definitions

Qualifiers

A	See Report Comments.
B	Analyte was present in an associated method blank.
B1	Analyte was present in a sample and associated method blank greater than MDL but less than RDL.
BQ1	No valid test replicates. Sample Toxicity is possible. Best result was reported.
BQ2	No valid test replicates.
BQ3	No valid test replicates. Final DO is less than 1.0 mg/L. Result may be greater.
C	Possible laboratory contamination.
D	RPD was not within control limits. The sample data was reported without further clarification.
D1	Lesser amount of sample was used due to insufficient amount of sample supplied.
D2	Reporting limit is elevated due to sample matrix. Target analyte was not detected above the elevated reporting limit.
D3	Insufficient sample was supplied for TCLP. Client was notified. TCLP was performed per the Client's instructions.
DW	Sample result is calculated on a dry weigh basis.
E	Concentration is estimated because it exceeds the quantification limits of the method.
I	The sample was read outside of the method required incubation period.
J	Reported value is estimated
L	The laboratory control sample (LCS) or laboratory control sample duplicate (LCSD) was out of control limits. Associated sample data was reported with qualifier.
M	The matrix spike (MS) or matrix spike duplicate (MSD) was not within control limits due to matrix interference. The associated LCS and/or LCSD was within control limits and the sample data was reported without further clarification.
M1	The matrix spike (MS) or matrix spike duplicate (MSD) is not within control limits due to matrix interference.
M2	The matrix spike (MS) or matrix spike duplicate (MSD) was not within control limits. The associated LCS and/or LCSD was not within control limits. Sample result is estimated.
N1	Sample chromatography does not match the specified TPH standard pattern.
NC	The analyte concentration in the sample exceeded the spike level by a factor of four or greater, spike recovery and limits do not apply.
P	Sample was received without proper preservation according to EPA guidelines.
P1	Temperature of sample storage refrigerator was out of acceptance limits.
P2	The sample was preserved within 24 hours of collection in accordance with EPA 218.6.
P3	Per Client request, sample was composited for volatile analysis. Sample compositing for volatile analysis is not recommended due to potential loss of target analytes. Results may be biased low.
Q1	Analyte Calibration Verification exceeds criteria. The result is estimated.
Q2	Analyte calibration was not verified and the result was estimated.
Q3	Analyte initial calibration was not available or exceeds criteria. The result was estimated.
S	The surrogate recovery was out of control limits due to matrix interference. The associated method blank surrogate recovery was within control limits and the sample data was reported without further clarification.
S1	The associated surrogate recovery was out of control limits; result is estimated.
S2	The surrogate was diluted out due to the presence of high concentrations of target and/or non-target compounds. Surrogate recoveries in the associated batch QC met recovery criteria.
S3	Internal Standard did not meet recovery limits. Analyte concentration is estimated.
T	Sample was extracted/analyzed past the holding time.
T1	Reanalysis was reported past hold time due to failing replicates in the original analysis (BOD only).
T2	Sample was analyzed ASAP but received and analyzed past the 15 minute holding time.
T3	Sample received and analyzed out of hold time per client's request.
T4	Sample was analyzed out of hold time per client's request.
T5	Reanalysis was reported past hold time. The original analysis was within hold time, but not reportable.
T6	Hold time is indeterminable due to unspecified sampling time.
T7	Sample was analyzed past hold time due to insufficient time remaining at time of receipt.

Definitions

DF	Dilution Factor
MDL	Method Detection Limit. Result is reported ND when it is less than or equal to MDL.
ND	Analyte was not detected or was less than the detection limit.
NR	Not Reported. See Report Comments.
RDL	Reporting Detection Limit
TIC	Tentatively Identified Compounds

DRAFT

ENTHALPY ANALYTICAL
931 W. Barkley Ave., Orange, CA 92868
Phone: (714) 771-6900 Fax: (714) 538-1209
Billing: Enthalpy Analytical
1 Park Plaza, Suite 1000
Irvine, CA 92614

ENTHALPY analytical, inc.

Chain of Custody Record

Lab No: 401318
Page: 1 of 2

Turn Around Time (Rush by advanced notice only)

Standard:	4 Day:	3 Day:
2 Day:	1 Day:	Same Day:

Matrix: A = Air DW = Drinking Water FL = Food Liquid FS = Food Solid L = Liquid PP = Pure Product S = Solid SeaW = Sea Water SW = Swab W = Water WP = Wipe O = Other

Preservatives: 1 = $Na_2S_2O_3$ 2 = HCl 3 = HNO_3 4 = H_2SO_4 5 = NaOH 6 = Other

CUSTOMER INFORMATION		PROJECT INFORMATION	
Company:	Apex Companies	Name:	Sears Brea Mall
Report To:	Paul Garcia	Number:	
Email:	paul.garcia@apexcos.com	P.O. #:	3616-A1000-003
Address:	10675 Sorrento Valley Road STE 203	Address:	100 Brea Mall
	San Diego, CA 92121		Brea, CA 92821
Phone:	858-558-1120	Global ID:	
Fax:	858-558-1121	Sampled By:	Tyler Steimel

	Sample ID	Sampling Date	Sampling Time	Matrix	Container No. / Size	Pres.	TPH Extended Range (8015B)	VOCs (8260B)	PCBs (8082)	PAHs (8270 SIM)	Luft-5 Metals (6010B)	Test Instructions / Comments
1	L5-5	4/3/18	956	S	2, 4oz+8oz	N/A	X		X			
2	L5-10	"	1000	S	1, 8oz	N/A						Hold
3	L5-12	"	~~1002~~ 1002	S	1, 4oz	N/A						Hold
4	L6-3	"	1140	S	2, 4oz+8oz		X		X			Hold
5	L6-8	"	1307	S	2, 4+8oz		X		X			~~Hold~~ Analyze
6	L7-5	"	1322	S	2, 4+8oz		X		X			
7	L7-7.5	"	1322	S	1, 8oz							Hold
8	L7-12	"	1320	S	1, 8oz							Hold
9	D7-2	"	1224	S	4+8oz, 3, 40ml	5035	X	X	X	X		
10	L6-12	"	1309	S	1, 8oz	N/A						Hold

	Signature	Print Name	Company / Title	Date / Time
[1] Relinquished By:		Tyler Steimel	Apex	4/3/18 / 1612
[1] Received By:		~~Tyler Steimel~~ ~~Tyler Steimel~~	Enthalpy	4-3-18 4:12 pm
[2] Relinquished By:		~~Tyler Steimel~~ ~~Tyler Steimel~~	"	4-3-18 4:40
[2] Received By:		Andrew L. Shaw	E.A.	04/03/18 16:40
[3] Relinquished By:				
[3] Received By:				

4.2 / 5.9

*1 week Turn *

ENTHALPY ANALYTICAL	Chain of Custody Record	Turn Around Time (Rush by advanced notice only)
931 W. Barkley Ave., Orange, CA 92868 Phone: (714) 771-6900 Fax: (714) 538-1209 Billing: Enthalpy Analytical 1 Park Plaza, Suite 1000 Irvine, CA 92614	Lab No: 401318 Page: 2 of 2 **Matrix:** A = Air DW = Drinking Water FL = Food Liquid FS = Food Solid L = Liquid PP = Pure Product S = Solid SeaW = Sea Water SW = Swab W = Water WP = Wipe O = Other	Standard: ☐ 4 Day: ☐ 3 Day: ☐ 2 Day: ☐ 1 Day: ☐ Same Day: ☐ **Preservatives:** 1 = $Na_2S_2O_3$ 2 = HCl 3 = HNO_3 4 = H_2SO_4 5 = NaOH 6 = Other

CUSTOMER INFORMATION		PROJECT INFORMATION	
Company:	Apex Companies	Name:	Sears Brea Mall
Report To:	Paul Garcia	Number:	
Email:	paul.garcia@apexcos.com	P.O. #:	3616-A1000-003
Address:	10675 Sorrento Valley Road STE 203	Address:	100 Brea Mall
	San Diego, CA 92121		Brea, CA 92821
Phone:	858-558-1120	Global ID:	
Fax:	858-558-1121	Sampled By:	Tyler Steimel

	Sample ID	Sampling Date	Sampling Time	Matrix	Container No. / Size	Pres.	TPH Extended Range (8015B)	VOCs (8260B)	PCBs (8082)	PAHs (8270 SIM)	Luft-5 Metals (6010B)	BTEX + MTBE					Test Instructions / Comments
1	LB-2	4/3/18	1327	S	4oz+8oz	N/A	X		X								1 week Turn.
2	LB-6	"	1428	"	8oz	N/A											Hold
3	LB-9	"	1430	"	8oz	N/A											Hold
4	LB-12	"	1432	"	8oz	N/A											Hold
5	LS1-2	"	1540	"	4x8oz+3,40ml	5035	X					X					
6	LS1-4	"	1548	"	8oz+3,40ml	5035											Hold
7	FE-1	"	1340	L	1 Amber				X								
8	SE-1	"	1350	L	1 Amber				X								
9																	
10																	

	Signature	Print Name	Company / Title	Date / Time
1 Relinquished By:	Tyl	Tyler Steimel	Apex	4/3/18 ; 1612
1 Received By:		[illegible]	Enthalpy	4-3-18 14:12 pm
2 Relinquished By:		[illegible]	4	4-3-18 14:40 pm
2 Received By:		Andrew L. Shaw	E.A.	04/03/18 16:40
3 Relinquished By:				
3 Received By:				

ENTHALPY ANALYTICAL

SAMPLE ACCEPTANCE CHECKLIST

Section 1

Client: Apex Companies Project: Sears Brea Mall

Date Received: 04/03/18 Sampler's Name Present: ☑ Yes ☐ No

Section 2

Sample(s) received in a cooler? ☑ Yes, How many? 1 ☐ No (skip section 2) Sample Temp (°C) (No Cooler): _____

Sample Temp (°C), One from each cooler: #1: 4.2 #2: _____ #3: _____ #4: _____

(Acceptance range is < 6°C but not frozen (for Microbiology samples, acceptance range is < 10°C but not frozen). It is acceptable for samples collected the same day as sample receipt to have a higher temperature as long as there is evidence that cooling has begun.)

Shipping Information: _____

Section 3

Was the cooler packed with: ☑ Ice ☐ Ice Packs ☐ Bubble Wrap ☐ Styrofoam ☐ Paper ☐ None ☐ Other _____

Cooler Temp (°C): #1: 5.9 #2: _____ #3: _____ #4: _____

Section 4	YES	NO	N/A
Was a COC received?	✓		
Are sample IDs present?	✓		
Are sampling dates & times present?	✓		
Is a relinquished signature present?	✓		
Are the tests required clearly indicated on the COC?	✓		
Are custody seals present?		✓	
If custody seals are present, were they intact?			✓
Are all samples sealed in plastic bags? (Recommended for Microbiology samples)	✓		
Did all samples arrive intact? If no, indicate in Section 4 below.	✓		
Did all bottle labels agree with COC? (ID, dates and times)	✓		
Were the samples collected in the correct containers for the required tests?	✓		
Are the containers labeled with the correct preservatives?	✓		
Is there headspace in the VOA vials greater than 5-6 mm in diameter?			✓
Was a sufficient amount of sample submitted for the requested tests?	✓		

Section 5 Explanations/Comments

Section 6

For discrepancies, how was the Project Manager notified? ☐ Verbal PM Initials: _____ Date/Time _____

☐ Email (email sent to/on): _____ / _____

Project Manager's response:

Completed By: _____ Date: 04/03/18

DRAFT

Enthalpy Analytical Field Technician Request Form

Version # 2.7
Effective 9/10/15

Client Info

Client Name:	APEX
Address:	10675 Sorrento Valley Rd.
City:	San Diego, CA 92121
Ordered By:	Paul Garcia
Client Project Manager:	
Phone:	858-558-1120 x 1507
Email:	paul.garcia@apexcos.com

Site Info

Address:	Sears Brea Mall Auto Center 100 Brea Mall
City:	Brea, CA 92821
Site Contact:	Tyler Steimel
Phone:	619-540-3067
2nd Site Contact:	
Phone:	

Request Completed By

Enthalpy Contact:	Diane Galvan
Date / Time:	3/27/18 @ 11:30

Date(s) Needed:	4/3/18 @ 4:00pm				
Before:		After:		Between:	
Assigned Field Technician:					
Arrival Time:		Leave Time:			
Pick Up	✓	**Delivery**			

Micro Sampling

1st Day:		Sampling Time:		# of samples:	
2nd Day:		Sampling Time:		# of samples:	
Verbal Notification required (ASAP):					
Primary Notification Contact Info:					
Secondary Notification Contact Info:					
Analysis:					

Water/Soil Sampling

ISCO:		Soil:		Water:	
Meter readings (ISCO):		# of samples:			
Analysis:					

Sampling Notes

TAT:		Return ASAP:		Return by:	
Comments/Instructions:					

Enthalpy Coordinator Use Only		Enthalpy PM Use Only	
Request Approved:		☑ Emailed ☐ Phoned ☐ No Notification	
Alternate Date/Time proposed:		Client contact notified:	Paul Garcia
Request Denied:			
Name / Signature:		Name / Signature:	Diane Galvan
Date/Time:	4/02/18	Date/Time:	3/27/18 @ 11:30

Please initial and date any changes.

DRAFT

Enthalpy Analytical, LLC
931 W. Barkley Ave - Orange, CA 92868
Tel: (714)771-6900 Fax: (714)538-1209
www.enthalpy.com
info-sc@enthalpy.com

MONTROSE ENVIRONMENTAL

Client: APEX
Address: 10675 Sorrento Valley Rd.
Suite 203
San Diego, CA 92121
Attn: Paul Garcia

Comments: Sears Brea Mall
3616-A1000-003

Lab Request: 401382
Report Date: 04/18/2018
Date Received: 04/04/2018
Client ID: 10359

This laboratory request covers the following listed samples which were analyzed for the parameters indicated on the attached Analytical Result Report. All analyses were conducted using the appropriate methods. Methods accredited by NELAC are indicated on the report. This cover letter is an integral part of the final report.

Sample #	Client Sample ID
401382-001	D1-2
401382-003	L9-3
401382-006	L10-5
401382-009	L11-3
401382-013	L12-1
401382-017	D2-4
401382-018	D3-1
401382-020	D5-1
401382-022	D6-1

DRAFT

Thank you for the opportunity to be of service to your company. Please feel free to call if there are any questions regarding this report or if we can be of further service.

Diane M. Galvan

Report Review performed by: Diane Galvan, Project Manager

NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 60 days from date received.

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ACCREDITED IN ACCORDANCE WITH nelac

Matrix: Solid	**Client:** APEX			**Collector:** Client	
Sampled: 04/03/2018 16:28	**Site:**				
Sample #: **401382-001**	**Client Sample #:** D1-2			**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 6010B *NELAC* Prep Method: EPA 3050B						QCBatchID: QC1189874		
Cadmium	**0.92**	1	0.5	mg/Kg	04/06/18	04/09/18	SBW	
Chromium	**14.8**	1	1	mg/Kg	04/06/18	04/09/18	SBW	
Lead	**2.34**	1	1	mg/Kg	04/06/18	04/09/18	SBW	
Nickel	**16.5**	1	1.5	mg/Kg	04/06/18	04/09/18	SBW	
Zinc	**31.5**	1	5	mg/Kg	04/06/18	04/09/18	SBW	
Method: EPA 8015B *NELAC* Prep Method: EPA 5030						QCBatchID: QC1189821		
TPH Gasoline	ND	1	3	mg/Kg		04/06/18	EW	
Surrogate	*% Recovery*		*Limits*	*Notes*				
4-Bromofluorobenzene (SUR)	*105*		*60-140*					
Method: EPA 8015M Prep Method: EPA 3580A						QCBatchID: QC1189883		
TPH Diesel	ND	1	10	mg/Kg	04/09/18	04/09/18	BB	
TPH Motor Oil	ND	1	20	mg/Kg	04/09/18	04/09/18	BB	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Triacontane (SUR)	*80*		*50-150*					
Method: EPA 8082 *NELAC* Prep Method: EPA 3545						QCBatchID: QC1190193		
PCB-1016	ND	1	50	ug/Kg	04/16/18	04/17/18	MTS	
PCB-1221	ND	1	50	ug/Kg	04/16/18	04/17/18	MTS	
PCB-1232	ND	1	50	ug/Kg	04/16/18	04/17/18	MTS	
PCB-1242	ND	1	50	ug/Kg	04/16/18	04/17/18	MTS	
PCB-1248	ND	1	50	ug/Kg	04/16/18	04/17/18	MTS	
PCB-1254	ND	1	50	ug/Kg	04/16/18	04/17/18	MTS	
PCB-1260	ND	1	50	ug/Kg	04/16/18	04/17/18	MTS	
PCB-1262	ND	1	50	ug/Kg	04/16/18	04/17/18	MTS	
PCB-1268	ND	1	50	ug/Kg	04/16/18	04/17/18	MTS	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Decachlorobiphenyl DCB (SUR)	*70*		*50-150*					
Method: EPA 8260B *NELAC* Prep Method: EPA 5035A						QCBatchID: QC1189855		
1,1,1,2-Tetrachloroethane	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
1,1,1-Trichloroethane	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
1,1,2,2-Tetrachloroethane	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
1,1,2-Trichloroethane	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
1,1,2-Trichlorotrifluoroethane	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
1,1-Dichloroethane	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
1,1-Dichloroethene	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
1,1-Dichloropropene	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
1,2,3-Trichlorobenzene	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
1,2,3-Trichloropropane	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
1,2,4-Trichlorobenzene	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
1,2,4-Trimethylbenzene	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
1,2-Dibromo-3-chloropropane	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
1,2-Dibromoethane	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
1,2-Dichlorobenzene	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
1,2-Dichloroethane	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
1,2-Dichloropropane	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
1,3,5-Trimethylbenzene	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
1,3-Dichlorobenzene	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
1,3-Dichloropropane	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
1,4-Dichlorobenzene	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
2,2-Dichloropropane	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
2-Butanone (MEK)	ND	1.02	102	ug/Kg		04/06/18	ZZ	
2-Chloroethyl Vinyl Ether	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	

DRAFT

Matrix:	Solid	**Client:**	APEX	**Collector:**	Client
Sampled:	04/03/2018 16:28	**Site:**			
Sample #:	**401382-001**	**Client Sample #:**	D1-2	**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
2-Chlorotoluene	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
4-Chlorotoluene	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
4-Isopropyltoluene	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
4-Methyl-2-pentanone (MIBK)	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
Acetone	ND	1.02	102	ug/Kg		04/06/18	ZZ	
Allyl Chloride	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
Benzene	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
Bromobenzene	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
Bromochloromethane	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
Bromodichloromethane	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
Bromoform	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
Bromomethane	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
Carbon Tetrachloride	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
Chlorobenzene	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
Chlorodibromomethane	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
Chloroethane	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
Chloroform	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
Chloromethane	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
cis-1,2-Dichloroethene	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
cis-1,3-dichloropropene	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
cis-1,4-dichloro-2-butene	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
Dibromomethane	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
Dichlorodifluoromethane	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
Di-isopropyl ether (DIPE)	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
Ethylbenzene	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
Ethyl-tertbutylether (ETBE)	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
Hexachlorobutadiene	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
Isopropylbenzene	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
m and p-Xylene	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
Methylene chloride	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
Methyl-t-butyl Ether (MTBE)	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
Naphthalene	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
N-butylbenzene	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
N-propylbenzene	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
o-Xylene	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
Sec-butylbenzene	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
Styrene	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
t-Butyl alcohol (TBA)	ND	1.02	10.2	ug/Kg		04/06/18	ZZ	
Tert-amylmethylether (TAME)	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
Tert-butylbenzene	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
Tetrachloroethene	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
Toluene	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
trans-1,2-dichloroethene	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
trans-1,3-dichloropropene	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
trans-1,4-dichloro-2-butene	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
Trichloroethene	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
Trichlorofluoromethane	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
Vinyl Chloride	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	
Xylenes (Total)	ND	1.02	5.1	ug/Kg		04/06/18	ZZ	

DRAFT

Matrix:	Solid	**Client:**	APEX	**Collector:**	Client
Sampled:	04/03/2018 16:28	**Site:**			
Sample #:	**401382-001**	**Client Sample #:**	D1-2	**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Surrogate	*% Recovery*		*Limits*	*Notes*				
1,2-Dichloroethane-d4 (SUR)	*105*		*70-145*					
4-Bromofluorobenzene (SUR)	*97*		*70-145*					
Dibromofluoromethane (SUR)	*106*		*70-145*					
Toluene-d8 (SUR)	*93*		*70-145*					
Method: EPA 8270CM	Prep Method: EPA 3545					QCBatchID: QC1190108		
1-Methylnaphthalene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
2-Methylnaphthalene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Acenaphthene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Acenaphthylene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Anthracene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benz(a)anthracene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benzo(a)pyrene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benzo(b)fluoranthene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benzo(g,h,i)perylene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benzo(k)fluoranthene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Chrysene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Dibenz(a,h)anthracene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Fluoranthene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Fluorene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Indeno(1,2,3-cd)pyrene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Naphthalene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Phenanthrene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Pyrene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Surrogate	*% Recovery*		*Limits*	*Notes*				
2-Fluorobiphenyl (SUR)	*72*		*30-120*					
Nitrobenzene-d5 (SUR)	*78*		*27-125*					
p-Terphenyl (SUR)	*76*		*33-155*					

DRAFT

Matrix: Solid **Client:** APEX **Collector:** Client
Sampled: 04/04/2018 09:20 **Site:**
Sample #: **401382-003** **Client Sample #:** L9-3 **Sample Type:**

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 8015B NELAC Prep Method: EPA 5030						QCBatchID: QC1189821		
TPH Gasoline	ND	1	3	mg/Kg		04/06/18	EW	
Surrogate	*% Recovery*		*Limits*	*Notes*				
4-Bromofluorobenzene (SUR)	*105*		*60-140*					
Method: EPA 8015M Prep Method: EPA 3580A						QCBatchID: QC1189962		
TPH Diesel	ND	1	10	mg/Kg	04/10/18	04/10/18	JAR	
TPH Motor Oil	ND	1	20	mg/Kg	04/10/18	04/10/18	JAR	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Triacontane (SUR)	*53*		*50-150*					
Method: EPA 8082 NELAC Prep Method: EPA 3545						QCBatchID: QC1189972		
PCB-1016	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1221	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1232	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1242	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1248	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1254	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1260	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1262	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1268	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Decachlorobiphenyl DCB (SUR)	*76*		*50-150*					

Matrix: Solid **Client:** APEX **Collector:** Client
Sampled: 04/04/2018 10:50 **Site:**
Sample #: **401382-006** **Client Sample #:** L10-5 **Sample Type:**

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 8015B NELAC Prep Method: EPA 5030						QCBatchID: QC1189821		
TPH Gasoline	ND	1	3	mg/Kg		04/06/18	EW	
Surrogate	*% Recovery*		*Limits*	*Notes*				
4-Bromofluorobenzene (SUR)	*100*		*60-140*					
Method: EPA 8015M Prep Method: EPA 3580A						QCBatchID: QC1189962		
TPH Diesel	ND	1	10	mg/Kg	04/10/18	04/10/18	JAR	
TPH Motor Oil	ND	1	20	mg/Kg	04/10/18	04/10/18	JAR	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Triacontane (SUR)	*59*		*50-150*					
Method: EPA 8082 NELAC Prep Method: EPA 3545						QCBatchID: QC1189972		
PCB-1016	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1221	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1232	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1242	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1248	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1254	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1260	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1262	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1268	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Decachlorobiphenyl DCB (SUR)	*62*		*50-150*					

DRAFT

Matrix: Solid **Client:** APEX **Collector:** Client
Sampled: 04/04/2018 11:02 **Site:**
Sample #: **401382-009** **Client Sample #:** L11-3 **Sample Type:**

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 8015B NELAC Prep Method: EPA 5030						QCBatchID: QC1189821		
TPH Gasoline	ND	1	3	mg/Kg		04/06/18	EW	
Surrogate	*% Recovery*		*Limits*	*Notes*				
4-Bromofluorobenzene (SUR)	*105*		*60-140*					
Method: EPA 8015M Prep Method: EPA 3580A						QCBatchID: QC1189883		
TPH Diesel	**26**	1	10	mg/Kg	04/09/18	04/09/18	BB	
TPH Motor Oil	**21**	1	20	mg/Kg	04/09/18	04/09/18	BB	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Triacontane (SUR)	*96*		*50-150*					
Method: EPA 8082 NELAC Prep Method: EPA 3545						QCBatchID: QC1189972		
PCB-1016	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1221	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1232	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1242	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1248	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1254	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1260	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1262	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1268	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Decachlorobiphenyl DCB (SUR)	*65*		*50-150*					

Matrix: Solid **Client:** APEX **Collector:** Client
Sampled: 04/04/2018 12:41 **Site:**
Sample #: **401382-013** **Client Sample #:** L12-1 **Sample Type:**

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 8015B NELAC Prep Method: EPA 5030						QCBatchID: QC1189821		
TPH Gasoline	ND	1	3	mg/Kg		04/06/18	EW	
Surrogate	*% Recovery*		*Limits*	*Notes*				
4-Bromofluorobenzene (SUR)	*100*		*60-140*					
Method: EPA 8015M Prep Method: EPA 3580A						QCBatchID: QC1189883		
TPH Diesel	ND	1	10	mg/Kg	04/09/18	04/09/18	BB	
TPH Motor Oil	ND	1	20	mg/Kg	04/09/18	04/09/18	BB	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Triacontane (SUR)	*87*		*50-150*					
Method: EPA 8082 NELAC Prep Method: EPA 3545						QCBatchID: QC1189972		
PCB-1016	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1221	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1232	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1242	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1248	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1254	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1260	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1262	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1268	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Decachlorobiphenyl DCB (SUR)	*78*		*50-150*					

DRAFT

Matrix: Solid	**Client:** APEX			**Collector:** Client	
Sampled: 04/04/2018 12:03	**Site:**				
Sample #: **401382-017**	**Client Sample #:** D2-4			**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 6010B *NELAC* Prep Method: EPA 3050B						QCBatchID: QC1189874		
Cadmium	**0.74**	1	0.5	mg/Kg	04/06/18	04/09/18	SBW	
Chromium	**7.28**	1	1	mg/Kg	04/06/18	04/09/18	SBW	
Lead	**1.99**	1	1	mg/Kg	04/06/18	04/09/18	SBW	
Nickel	**8.94**	1	1.5	mg/Kg	04/06/18	04/09/18	SBW	
Zinc	**18.0**	1	5	mg/Kg	04/06/18	04/09/18	SBW	
Method: EPA 8015B *NELAC* Prep Method: EPA 5030						QCBatchID: QC1189821		
TPH Gasoline	ND	1	3	mg/Kg		04/06/18	EW	
Surrogate	*% Recovery*		*Limits*	*Notes*				
4-Bromofluorobenzene (SUR)	*100*		*60-140*					
Method: EPA 8015M Prep Method: EPA 3580A						QCBatchID: QC1189962		
TPH Diesel	ND	1	10	mg/Kg	04/10/18	04/10/18	JAR	
TPH Motor Oil	ND	1	20	mg/Kg	04/10/18	04/10/18	JAR	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Triacontane (SUR)	*46*		*50-150*	*S*				
Method: EPA 8082 *NELAC* Prep Method: EPA 3545						QCBatchID: QC1189972		
PCB-1016	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1221	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1232	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1242	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1248	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1254	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1260	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1262	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1268	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Decachlorobiphenyl DCB (SUR)	*70*		*50-150*					
Method: EPA 8260B *NELAC* Prep Method: EPA 5035A						QCBatchID: QC1189855		
1,1,1,2-Tetrachloroethane	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
1,1,1-Trichloroethane	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
1,1,2,2-Tetrachloroethane	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
1,1,2-Trichloroethane	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
1,1,2-Trichlorotrifluoroethane	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
1,1-Dichloroethane	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
1,1-Dichloroethene	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
1,1-Dichloropropene	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
1,2,3-Trichlorobenzene	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
1,2,3-Trichloropropane	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
1,2,4-Trichlorobenzene	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
1,2,4-Trimethylbenzene	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
1,2-Dibromo-3-chloropropane	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
1,2-Dibromoethane	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
1,2-Dichlorobenzene	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
1,2-Dichloroethane	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
1,2-Dichloropropane	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
1,3,5-Trimethylbenzene	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
1,3-Dichlorobenzene	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
1,3-Dichloropropane	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
1,4-Dichlorobenzene	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
2,2-Dichloropropane	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
2-Butanone (MEK)	ND	1.28	128	ug/Kg		04/06/18	ZZ	
2-Chloroethyl Vinyl Ether	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	

DRAFT

Matrix: Solid	**Client:** APEX			**Collector:** Client	
Sampled: 04/04/2018 12:03	**Site:**				
Sample #: 401382-017	**Client Sample #:** D2-4			**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
2-Chlorotoluene	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
4-Chlorotoluene	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
4-Isopropyltoluene	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
4-Methyl-2-pentanone (MIBK)	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
Acetone	ND	1.28	128	ug/Kg		04/06/18	ZZ	
Allyl Chloride	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
Benzene	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
Bromobenzene	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
Bromochloromethane	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
Bromodichloromethane	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
Bromoform	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
Bromomethane	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
Carbon Tetrachloride	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
Chlorobenzene	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
Chlorodibromomethane	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
Chloroethane	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
Chloroform	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
Chloromethane	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
cis-1,2-Dichloroethene	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
cis-1,3-dichloropropene	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
cis-1,4-dichloro-2-butene	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
Dibromomethane	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
Dichlorodifluoromethane	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
Di-isopropyl ether (DIPE)	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
Ethylbenzene	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
Ethyl-tertbutylether (ETBE)	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
Hexachlorobutadiene	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
Isopropylbenzene	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
m and p-Xylene	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
Methylene chloride	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
Methyl-t-butyl Ether (MTBE)	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
Naphthalene	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
N-butylbenzene	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
N-propylbenzene	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
o-Xylene	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
Sec-butylbenzene	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
Styrene	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
t-Butyl alcohol (TBA)	ND	1.28	12.8	ug/Kg		04/06/18	ZZ	
Tert-amylmethylether (TAME)	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
Tert-butylbenzene	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
Tetrachloroethene	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
Toluene	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
trans-1,2-dichloroethene	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
trans-1,3-dichloropropene	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
trans-1,4-dichloro-2-butene	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
Trichloroethene	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
Trichlorofluoromethane	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
Vinyl Chloride	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	
Xylenes (Total)	ND	1.28	6.4	ug/Kg		04/06/18	ZZ	

DRAFT

Matrix:	Solid	**Client:**	APEX	**Collector:**	Client
Sampled:	04/04/2018 12:03	**Site:**			
Sample #:	**401382-017**	**Client Sample #:**	D2-4	**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Surrogate	*% Recovery*		*Limits*	*Notes*				
1,2-Dichloroethane-d4 (SUR)	*98*		*70-145*					
4-Bromofluorobenzene (SUR)	*99*		*70-145*					
Dibromofluoromethane (SUR)	*101*		*70-145*					
Toluene-d8 (SUR)	*98*		*70-145*					
Method: EPA 8270CM	Prep Method: EPA 3545					QCBatchID: QC1190108		
1-Methylnaphthalene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
2-Methylnaphthalene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Acenaphthene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Acenaphthylene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Anthracene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benz(a)anthracene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benzo(a)pyrene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benzo(b)fluoranthene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benzo(g,h,i)perylene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benzo(k)fluoranthene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Chrysene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Dibenz(a,h)anthracene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Fluoranthene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Fluorene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Indeno(1,2,3-cd)pyrene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Naphthalene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Phenanthrene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Pyrene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Surrogate	*% Recovery*		*Limits*	*Notes*				
2-Fluorobiphenyl (SUR)	*73*		*30-120*					
Nitrobenzene-d5 (SUR)	*79*		*27-125*					
p-Terphenyl (SUR)	*79*		*33-155*					

DRAFT

Matrix: Solid	**Client:** APEX			**Collector:** Client	
Sampled: 04/04/2018 12:33	**Site:**				
Sample #: **401382-018**	**Client Sample #:** D3-1			**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 6010B *NELAC* Prep Method: EPA 3050B						QCBatchID: QC1189874		
Cadmium	**0.78**	1	0.5	mg/Kg	04/06/18	04/09/18	SBW	
Chromium	**16.4**	1	1	mg/Kg	04/06/18	04/09/18	SBW	
Lead	**3.90**	1	1	mg/Kg	04/06/18	04/09/18	SBW	
Nickel	**15.4**	1	1.5	mg/Kg	04/06/18	04/09/18	SBW	
Zinc	**34.6**	1	5	mg/Kg	04/06/18	04/09/18	SBW	
Method: EPA 8015B *NELAC* Prep Method: EPA 5030						QCBatchID: QC1189821		
TPH Gasoline	ND	1	3	mg/Kg		04/06/18	EW	
Surrogate	*% Recovery*		*Limits*	*Notes*				
4-Bromofluorobenzene (SUR)	*105*		*60-140*					
Method: EPA 8015M Prep Method: EPA 3580A						QCBatchID: QC1189883		
TPH Diesel	ND	1	10	mg/Kg	04/09/18	04/10/18	BB	
TPH Motor Oil	ND	1	20	mg/Kg	04/09/18	04/10/18	BB	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Triacontane (SUR)	*89*		*50-150*					
Method: EPA 8082 *NELAC* Prep Method: EPA 3545						QCBatchID: QC1189972		
PCB-1016	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1221	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1232	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1242	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1248	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1254	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1260	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1262	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1268	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Decachlorobiphenyl DCB (SUR)	*87*		*50-150*					
Method: EPA 8260B *NELAC* Prep Method: EPA 5035A						QCBatchID: QC1189855		
1,1,1,2-Tetrachloroethane	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
1,1,1-Trichloroethane	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
1,1,2,2-Tetrachloroethane	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
1,1,2-Trichloroethane	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
1,1,2-Trichlorotrifluoroethane	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
1,1-Dichloroethane	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
1,1-Dichloroethene	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
1,1-Dichloropropene	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
1,2,3-Trichlorobenzene	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
1,2,3-Trichloropropane	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
1,2,4-Trichlorobenzene	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
1,2,4-Trimethylbenzene	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
1,2-Dibromo-3-chloropropane	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
1,2-Dibromoethane	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
1,2-Dichlorobenzene	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
1,2-Dichloroethane	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
1,2-Dichloropropane	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
1,3,5-Trimethylbenzene	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
1,3-Dichlorobenzene	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
1,3-Dichloropropane	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
1,4-Dichlorobenzene	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
2,2-Dichloropropane	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
2-Butanone (MEK)	ND	1.09	109	ug/Kg		04/06/18	ZZ	
2-Chloroethyl Vinyl Ether	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	

DRAFT

Matrix: Solid	**Client:** APEX			**Collector:** Client	
Sampled: 04/04/2018 12:33	**Site:**				
Sample #: 401382-018	**Client Sample #:** D3-1			**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
2-Chlorotoluene	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
4-Chlorotoluene	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
4-Isopropyltoluene	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
4-Methyl-2-pentanone (MIBK)	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
Acetone	ND	1.09	109	ug/Kg		04/06/18	ZZ	
Allyl Chloride	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
Benzene	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
Bromobenzene	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
Bromochloromethane	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
Bromodichloromethane	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
Bromoform	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
Bromomethane	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
Carbon Tetrachloride	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
Chlorobenzene	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
Chlorodibromomethane	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
Chloroethane	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
Chloroform	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
Chloromethane	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
cis-1,2-Dichloroethene	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
cis-1,3-dichloropropene	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
cis-1,4-dichloro-2-butene	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
Dibromomethane	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
Dichlorodifluoromethane	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
Di-isopropyl ether (DIPE)	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
Ethylbenzene	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
Ethyl-tertbutylether (ETBE)	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
Hexachlorobutadiene	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
Isopropylbenzene	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
m and p-Xylene	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
Methylene chloride	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
Methyl-t-butyl Ether (MTBE)	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
Naphthalene	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
N-butylbenzene	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
N-propylbenzene	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
o-Xylene	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
Sec-butylbenzene	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
Styrene	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
t-Butyl alcohol (TBA)	ND	1.09	10.9	ug/Kg		04/06/18	ZZ	
Tert-amylmethylether (TAME)	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
Tert-butylbenzene	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
Tetrachloroethene	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
Toluene	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
trans-1,2-dichloroethene	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
trans-1,3-dichloropropene	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
trans-1,4-dichloro-2-butene	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
Trichloroethene	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
Trichlorofluoromethane	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
Vinyl Chloride	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	
Xylenes (Total)	ND	1.09	5.45	ug/Kg		04/06/18	ZZ	

DRAFT

Matrix:	Solid	**Client:**	APEX	**Collector:**	Client
Sampled:	04/04/2018 12:33	**Site:**			
Sample #:	**401382-018**	**Client Sample #:**	D3-1	**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Surrogate	*% Recovery*		*Limits*	*Notes*				
1,2-Dichloroethane-d4 (SUR)	*94*		*70-145*					
4-Bromofluorobenzene (SUR)	*95*		*70-145*					
Dibromofluoromethane (SUR)	*98*		*70-145*					
Toluene-d8 (SUR)	*99*		*70-145*					
Method: EPA 8270CM	Prep Method: EPA 3545					QCBatchID: QC1190108		
1-Methylnaphthalene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
2-Methylnaphthalene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Acenaphthene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Acenaphthylene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Anthracene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benz(a)anthracene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benzo(a)pyrene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benzo(b)fluoranthene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benzo(g,h,i)perylene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benzo(k)fluoranthene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Chrysene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Dibenz(a,h)anthracene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Fluoranthene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Fluorene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Indeno(1,2,3-cd)pyrene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Naphthalene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Phenanthrene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Pyrene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Surrogate	*% Recovery*		*Limits*	*Notes*				
2-Fluorobiphenyl (SUR)	*61*		*30-120*					
Nitrobenzene-d5 (SUR)	*71*		*27-125*					
p-Terphenyl (SUR)	*85*		*33-155*					

DRAFT

Matrix: Solid	**Client:** APEX			**Collector:** Client	
Sampled: 04/04/2018 14:45	**Site:**				
Sample #: **401382-020**	**Client Sample #:** D5-1			**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 6010B *NELAC* Prep Method: EPA 3050B						QCBatchID: QC1189874		
Cadmium	**1.28**	1	0.5	mg/Kg	04/06/18	04/09/18	SBW	
Chromium	**16.7**	1	1	mg/Kg	04/06/18	04/09/18	SBW	
Lead	**4.11**	1	1	mg/Kg	04/06/18	04/09/18	SBW	
Nickel	**15.5**	1	1.5	mg/Kg	04/06/18	04/09/18	SBW	
Zinc	**35.4**	1	5	mg/Kg	04/06/18	04/09/18	SBW	
Method: EPA 8015B *NELAC* Prep Method: EPA 5030						QCBatchID: QC1189821		
TPH Gasoline	ND	1	3	mg/Kg		04/06/18	EW	
Surrogate	*% Recovery*		*Limits*	*Notes*				
4-Bromofluorobenzene (SUR)	*105*		*60-140*					
Method: EPA 8015M Prep Method: EPA 3580A						QCBatchID: QC1189883		
TPH Diesel	**11**	1	10	mg/Kg	04/09/18	04/10/18	BB	
TPH Motor Oil	ND	1	20	mg/Kg	04/09/18	04/10/18	BB	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Triacontane (SUR)	*93*		*50-150*					
Method: EPA 8082 *NELAC* Prep Method: EPA 3545						QCBatchID: QC1190193		
PCB-1016	ND	1	50	ug/Kg	04/16/18	04/17/18	MTS	
PCB-1221	ND	1	50	ug/Kg	04/16/18	04/17/18	MTS	
PCB-1232	ND	1	50	ug/Kg	04/16/18	04/17/18	MTS	
PCB-1242	ND	1	50	ug/Kg	04/16/18	04/17/18	MTS	
PCB-1248	ND	1	50	ug/Kg	04/16/18	04/17/18	MTS	
PCB-1254	ND	1	50	ug/Kg	04/16/18	04/17/18	MTS	
PCB-1260	ND	1	50	ug/Kg	04/16/18	04/17/18	MTS	
PCB-1262	ND	1	50	ug/Kg	04/16/18	04/17/18	MTS	
PCB-1268	ND	1	50	ug/Kg	04/16/18	04/17/18	MTS	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Decachlorobiphenyl DCB (SUR)	*69*		*50-150*					
Method: EPA 8260B *NELAC* Prep Method: EPA 5035A						QCBatchID: QC1189855		
1,1,1,2-Tetrachloroethane	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
1,1,1-Trichloroethane	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
1,1,2,2-Tetrachloroethane	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
1,1,2-Trichloroethane	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
1,1,2-Trichlorotrifluoroethane	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
1,1-Dichloroethane	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
1,1-Dichloroethene	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
1,1-Dichloropropene	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
1,2,3-Trichlorobenzene	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
1,2,3-Trichloropropane	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
1,2,4-Trichlorobenzene	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
1,2,4-Trimethylbenzene	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
1,2-Dibromo-3-chloropropane	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
1,2-Dibromoethane	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
1,2-Dichlorobenzene	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
1,2-Dichloroethane	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
1,2-Dichloropropane	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
1,3,5-Trimethylbenzene	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
1,3-Dichlorobenzene	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
1,3-Dichloropropane	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
1,4-Dichlorobenzene	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
2,2-Dichloropropane	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
2-Butanone (MEK)	ND	1.56	156	ug/Kg		04/06/18	ZZ	
2-Chloroethyl Vinyl Ether	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	

DRAFT

Matrix: Solid	**Client:** APEX			**Collector:** Client	
Sampled: 04/04/2018 14:45	**Site:**				
Sample #: 401382-020	**Client Sample #:** D5-1			**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
2-Chlorotoluene	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
4-Chlorotoluene	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
4-Isopropyltoluene	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
4-Methyl-2-pentanone (MIBK)	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
Acetone	ND	1.56	156	ug/Kg		04/06/18	ZZ	
Allyl Chloride	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
Benzene	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
Bromobenzene	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
Bromochloromethane	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
Bromodichloromethane	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
Bromoform	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
Bromomethane	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
Carbon Tetrachloride	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
Chlorobenzene	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
Chlorodibromomethane	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
Chloroethane	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
Chloroform	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
Chloromethane	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
cis-1,2-Dichloroethene	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
cis-1,3-dichloropropene	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
cis-1,4-dichloro-2-butene	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
Dibromomethane	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
Dichlorodifluoromethane	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
Di-isopropyl ether (DIPE)	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
Ethylbenzene	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
Ethyl-tertbutylether (ETBE)	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
Hexachlorobutadiene	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
Isopropylbenzene	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
m and p-Xylene	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
Methylene chloride	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
Methyl-t-butyl Ether (MTBE)	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
Naphthalene	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
N-butylbenzene	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
N-propylbenzene	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
o-Xylene	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
Sec-butylbenzene	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
Styrene	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
t-Butyl alcohol (TBA)	ND	1.56	15.6	ug/Kg		04/06/18	ZZ	
Tert-amylmethylether (TAME)	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
Tert-butylbenzene	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
Tetrachloroethene	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
Toluene	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
trans-1,2-dichloroethene	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
trans-1,3-dichloropropene	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
trans-1,4-dichloro-2-butene	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
Trichloroethene	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
Trichlorofluoromethane	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
Vinyl Chloride	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	
Xylenes (Total)	ND	1.56	7.8	ug/Kg		04/06/18	ZZ	

DRAFT

Matrix:	Solid	**Client:**	APEX	**Collector:**	Client
Sampled:	04/04/2018 14:45	**Site:**			
Sample #:	**401382-020**	**Client Sample #:**	D5-1	**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Surrogate	*% Recovery*		*Limits*	*Notes*				
1,2-Dichloroethane-d4 (SUR)	*101*		*70-145*					
4-Bromofluorobenzene (SUR)	*97*		*70-145*					
Dibromofluoromethane (SUR)	*103*		*70-145*					
Toluene-d8 (SUR)	*96*		*70-145*					
Method: EPA 8270CM	Prep Method: EPA 3545					QCBatchID: QC1190108		
1-Methylnaphthalene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
2-Methylnaphthalene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Acenaphthene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Acenaphthylene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Anthracene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benz(a)anthracene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benzo(a)pyrene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benzo(b)fluoranthene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benzo(g,h,i)perylene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benzo(k)fluoranthene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Chrysene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Dibenz(a,h)anthracene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Fluoranthene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Fluorene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Indeno(1,2,3-cd)pyrene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Naphthalene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Phenanthrene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Pyrene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Surrogate	*% Recovery*		*Limits*	*Notes*				
2-Fluorobiphenyl (SUR)	*71*		*30-120*					
Nitrobenzene-d5 (SUR)	*93*		*27-125*					
p-Terphenyl (SUR)	*94*		*33-155*					

DRAFT

Matrix: Solid	**Client:** APEX			**Collector:** Client	
Sampled: 04/04/2018 11:50	**Site:**				
Sample #: **401382-022**	**Client Sample #:** D6-1			**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 6010B *NELAC* Prep Method: EPA 3050B						QCBatchID: QC1189874		
Cadmium	**0.83**	1	0.5	mg/Kg	04/06/18	04/09/18	SBW	
Chromium	**15.4**	1	1	mg/Kg	04/06/18	04/09/18	SBW	
Lead	**3.47**	1	1	mg/Kg	04/06/18	04/09/18	SBW	
Nickel	**13.9**	1	1.5	mg/Kg	04/06/18	04/09/18	SBW	
Zinc	**33.5**	1	5	mg/Kg	04/06/18	04/09/18	SBW	
Method: EPA 8015B *NELAC* Prep Method: EPA 5030						QCBatchID: QC1189821		
TPH Gasoline	ND	1	3	mg/Kg		04/06/18	EW	
Surrogate	*% Recovery*		*Limits*	*Notes*				
4-Bromofluorobenzene (SUR)	*100*		*60-140*					
Method: EPA 8015M Prep Method: EPA 3580A						QCBatchID: QC1189883		
TPH Diesel	ND	1	10	mg/Kg	04/09/18	04/10/18	BB	
TPH Motor Oil	ND	1	20	mg/Kg	04/09/18	04/10/18	BB	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Triacontane (SUR)	*90*		*50-150*					
Method: EPA 8082 *NELAC* Prep Method: EPA 3545						QCBatchID: QC1189972		
PCB-1016	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1221	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1232	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1242	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1248	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1254	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1260	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1262	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1268	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Decachlorobiphenyl DCB (SUR)	*73*		*50-150*					
Method: EPA 8260B *NELAC* Prep Method: EPA 5035A						QCBatchID: QC1189855		
1,1,1,2-Tetrachloroethane	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
1,1,1-Trichloroethane	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
1,1,2,2-Tetrachloroethane	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
1,1,2-Trichloroethane	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
1,1,2-Trichlorotrifluoroethane	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
1,1-Dichloroethane	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
1,1-Dichloroethene	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
1,1-Dichloropropene	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
1,2,3-Trichlorobenzene	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
1,2,3-Trichloropropane	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
1,2,4-Trichlorobenzene	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
1,2,4-Trimethylbenzene	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
1,2-Dibromo-3-chloropropane	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
1,2-Dibromoethane	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
1,2-Dichlorobenzene	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
1,2-Dichloroethane	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
1,2-Dichloropropane	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
1,3,5-Trimethylbenzene	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
1,3-Dichlorobenzene	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
1,3-Dichloropropane	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
1,4-Dichlorobenzene	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
2,2-Dichloropropane	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
2-Butanone (MEK)	ND	1.06	106	ug/Kg		04/06/18	ZZ	
2-Chloroethyl Vinyl Ether	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	

DRAFT

Matrix:	Solid	**Client:**	APEX	**Collector:**	Client
Sampled:	04/04/2018 11:50	**Site:**			
Sample #:	**401382-022**	**Client Sample #:**	D6-1	**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
2-Chlorotoluene	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
4-Chlorotoluene	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
4-Isopropyltoluene	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
4-Methyl-2-pentanone (MIBK)	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
Acetone	ND	1.06	106	ug/Kg		04/06/18	ZZ	
Allyl Chloride	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
Benzene	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
Bromobenzene	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
Bromochloromethane	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
Bromodichloromethane	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
Bromoform	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
Bromomethane	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
Carbon Tetrachloride	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
Chlorobenzene	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
Chlorodibromomethane	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
Chloroethane	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
Chloroform	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
Chloromethane	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
cis-1,2-Dichloroethene	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
cis-1,3-dichloropropene	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
cis-1,4-dichloro-2-butene	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
Dibromomethane	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
Dichlorodifluoromethane	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
Di-isopropyl ether (DIPE)	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
Ethylbenzene	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
Ethyl-tertbutylether (ETBE)	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
Hexachlorobutadiene	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
Isopropylbenzene	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
m and p-Xylene	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
Methylene chloride	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
Methyl-t-butyl Ether (MTBE)	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
Naphthalene	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
N-butylbenzene	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
N-propylbenzene	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
o-Xylene	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
Sec-butylbenzene	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
Styrene	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
t-Butyl alcohol (TBA)	ND	1.06	10.6	ug/Kg		04/06/18	ZZ	
Tert-amylmethylether (TAME)	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
Tert-butylbenzene	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
Tetrachloroethene	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
Toluene	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
trans-1,2-dichloroethene	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
trans-1,3-dichloropropene	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
trans-1,4-dichloro-2-butene	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
Trichloroethene	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
Trichlorofluoromethane	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
Vinyl Chloride	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	
Xylenes (Total)	ND	1.06	5.3	ug/Kg		04/06/18	ZZ	

DRAFT

Matrix:	Solid	**Client:**	APEX	**Collector:**	Client
Sampled:	04/04/2018 11:50	**Site:**			
Sample #:	**401382-022**	**Client Sample #:**	D6-1	**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Surrogate	*% Recovery*		*Limits*	*Notes*				
1,2-Dichloroethane-d4 (SUR)	*99*		*70-145*					
4-Bromofluorobenzene (SUR)	*95*		*70-145*					
Dibromofluoromethane (SUR)	*101*		*70-145*					
Toluene-d8 (SUR)	*98*		*70-145*					
Method: EPA 8270CM	Prep Method: EPA 3545					QCBatchID: QC1190108		
1-Methylnaphthalene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
2-Methylnaphthalene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Acenaphthene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Acenaphthylene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Anthracene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benz(a)anthracene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benzo(a)pyrene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benzo(b)fluoranthene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benzo(g,h,i)perylene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benzo(k)fluoranthene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Chrysene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Dibenz(a,h)anthracene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Fluoranthene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Fluorene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Indeno(1,2,3-cd)pyrene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Naphthalene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Phenanthrene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Pyrene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Surrogate	*% Recovery*		*Limits*	*Notes*				
2-Fluorobiphenyl (SUR)	*73*		*30-120*					
Nitrobenzene-d5 (SUR)	*89*		*27-125*					
p-Terphenyl (SUR)	*93*		*33-155*					

DRAFT

QCBatchID: QC1189821	Analyst: sandyw	Method: EPA 8015B
Matrix: Solid	Analyzed: 04/06/2018	Instrument: VOA-GC (group)

Blank Summary

Analyte	Blank Result	Units		RDL	Notes	
QC1189821MB1						
TPH Gasoline	ND	mg/Kg		3		

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount LCS	Spike Amount LCSD	Spike Result LCS	Spike Result LCSD	Units	Recoveries LCS	Recoveries LCSD	RPD	Limits %Rec	Limits RPD	Notes
QC1189821LCS1											
TPH Gasoline	5		5.79		mg/Kg	116			70-130		

Matrix Spike/Matrix Spike Duplicate Summary

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1189821MS1, QC1189821MSD1												**Source: 401382-009**
TPH Gasoline	ND	5	5	5.37	5.03	mg/Kg	107	101	6.5	70-130	20	

DRAFT

QCBatchID: QC1189855	Analyst: nicollez	Method: EPA 8260B
Matrix: Solid	Analyzed: 04/06/2018	Instrument: VOA-MS (group)

Blank Summary

Analyte	Blank Result	Units		RDL	Notes
QC1189855MB1					
1,1,1,2-Tetrachloroethane	ND	ug/Kg		5	
1,1,1-Trichloroethane	ND	ug/Kg		5	
1,1,2,2-Tetrachloroethane	ND	ug/Kg		5	
1,1,2-Trichloroethane	ND	ug/Kg		5	
1,1,2-Trichlorotrifluoroethane	ND	ug/Kg		5	
1,1-Dichloroethane	ND	ug/Kg		5	
1,1-Dichloroethene	ND	ug/Kg		5	
1,1-Dichloropropene	ND	ug/Kg		5	
1,2,3-Trichlorobenzene	ND	ug/Kg		5	
1,2,3-Trichloropropane	ND	ug/Kg		5	
1,2,4-Trichlorobenzene	ND	ug/Kg		5	
1,2,4-Trimethylbenzene	ND	ug/Kg		5	
1,2-Dibromo-3-chloropropane	ND	ug/Kg		5	
1,2-Dibromoethane	ND	ug/Kg		5	
1,2-Dichlorobenzene	ND	ug/Kg		5	
1,2-Dichloroethane	ND	ug/Kg		5	
1,2-Dichloropropane	ND	ug/Kg		5	
1,3,5-Trimethylbenzene	ND	ug/Kg		5	
1,3-Dichlorobenzene	ND	ug/Kg		5	
1,3-Dichloropropane	ND	ug/Kg		5	
1,4-Dichlorobenzene	ND	ug/Kg		5	
2,2-Dichloropropane	ND	ug/Kg		5	
2-Butanone (MEK)	ND	ug/Kg		100	
2-Chloroethyl Vinyl Ether	ND	ug/Kg		5	
2-Chlorotoluene	ND	ug/Kg		5	
4-Chlorotoluene	ND	ug/Kg		5	
4-Isopropyltoluene	ND	ug/Kg		5	
4-Methyl-2-pentanone (MIBK)	ND	ug/Kg		5	
Acetone	ND	ug/Kg		100	
Allyl Chloride	ND	ug/Kg		5	
Benzene	ND	ug/Kg		5	
Bromobenzene	ND	ug/Kg		5	
Bromochloromethane	ND	ug/Kg		5	
Bromodichloromethane	ND	ug/Kg		5	
Bromoform	ND	ug/Kg		5	
Bromomethane	ND	ug/Kg		5	
Carbon Tetrachloride	ND	ug/Kg		5	
Chlorobenzene	ND	ug/Kg		5	
Chlorodibromomethane	ND	ug/Kg		5	
Chloroethane	ND	ug/Kg		5	
Chloroform	ND	ug/Kg		5	
Chloromethane	ND	ug/Kg		5	
cis-1,2-Dichloroethene	ND	ug/Kg		5	
cis-1,3-dichloropropene	ND	ug/Kg		5	
cis-1,4-dichloro-2-butene	ND	ug/Kg		5	
Dibromomethane	ND	ug/Kg		5	
Dichlorodifluoromethane	ND	ug/Kg		5	
Di-isopropyl ether (DIPE)	ND	ug/Kg		5	
Ethylbenzene	ND	ug/Kg		5	
Ethyl-tertbutylether (ETBE)	ND	ug/Kg		5	
Hexachlorobutadiene	ND	ug/Kg		5	

DRAFT

QCBatchID: QC1189855	Analyst: nicollez	Method: EPA 8260B
Matrix: Solid	Analyzed: 04/06/2018	Instrument: VOA-MS (group)

Analyte	Blank Result	Units		RDL	Notes
QC1189855MB1					
Isopropylbenzene	ND	ug/Kg		5	
m and p-Xylene	ND	ug/Kg		5	
Methylene chloride	ND	ug/Kg		5	
Methyl-t-butyl Ether (MTBE)	ND	ug/Kg		5	
Naphthalene	ND	ug/Kg		5	
N-butylbenzene	ND	ug/Kg		5	
N-propylbenzene	ND	ug/Kg		5	
o-Xylene	ND	ug/Kg		5	
Sec-butylbenzene	ND	ug/Kg		5	
Styrene	ND	ug/Kg		5	
t-Butyl alcohol (TBA)	ND	ug/Kg		10	
Tert-amylmethylether (TAME)	ND	ug/Kg		5	
Tert-butylbenzene	ND	ug/Kg		5	
Tetrachloroethene	ND	ug/Kg		5	
Toluene	ND	ug/Kg		5	
trans-1,2-dichloroethene	ND	ug/Kg		5	
trans-1,3-dichloropropene	ND	ug/Kg		5	
trans-1,4-dichloro-2-butene	ND	ug/Kg		5	
Trichloroethene	ND	ug/Kg		5	
Trichlorofluoromethane	ND	ug/Kg		5	
Vinyl Chloride	ND	ug/Kg		5	
Xylenes (Total)	ND	ug/Kg		5	

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount LCS	Spike Amount LCSD	Spike Result LCS	Spike Result LCSD	Units	Recoveries LCS	Recoveries LCSD	RPD	Limits %Rec	Limits RPD	Notes
QC1189855LCS1, QC1189855LCSD1											
1,1-Dichloroethene	50	50	40	38	ug/Kg	80	76	5	59-172	22	
Benzene	50	50	44	42	ug/Kg	88	84	5	62-137	24	
Chlorobenzene	50	50	43	42	ug/Kg	86	84	2	60-133	24	
Methyl-t-butyl Ether (MTBE)	50	50	38	36	ug/Kg	76	72	5	62-137	21	
Toluene	50	50	42	41	ug/Kg	84	82	2	59-139	21	
Trichloroethene	50	50	44	44	ug/Kg	88	88	0	66-142	21	

DRAFT

QCBatchID: QC1189874 **Analyst:** dswafford **Method:** EPA 6010B

Matrix: Solid **Analyzed:** 04/08/2018 **Instrument:** AAICP (group)

Blank Summary

Analyte	Blank Result	Units		RDL	Notes
QC1189874MB1					
Aluminum	ND	mg/Kg		5	
Antimony	ND	mg/Kg		3	
Arsenic	ND	mg/Kg		1	
Barium	ND	mg/Kg		1	
Beryllium	ND	mg/Kg		0.5	
Cadmium	ND	mg/Kg		0.5	
Calcium	ND	mg/Kg		50	
Chromium	ND	mg/Kg		1	
Cobalt	ND	mg/Kg		0.5	
Copper	ND	mg/Kg		1	
Iron	ND	mg/Kg		5	
Lead	ND	mg/Kg		1	
Magnesium	ND	mg/Kg		25	
Manganese	ND	mg/Kg		1	
Molybdenum	ND	mg/Kg		1	
Nickel	ND	mg/Kg		1.5	
Potassium	ND	mg/Kg		50	
Selenium	ND	mg/Kg		3	
Silver	ND	mg/Kg		0.5	
Sodium	ND	mg/Kg		50	
Thallium	ND	mg/Kg		3	
Vanadium	ND	mg/Kg		0.5	
Zinc	ND	mg/Kg		5	

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount LCS	Spike Amount LCSD	Spike Result LCS	Spike Result LCSD	Units	Recoveries LCS	Recoveries LCSD	RPD	Limits %Rec	Limits RPD	Notes
QC1189874LCS1											
Antimony	100		97.2		mg/Kg	97			80-120		
Arsenic	100		93.5		mg/Kg	94			80-120		
Barium	100		99.7		mg/Kg	100			80-120		
Beryllium	100		105		mg/Kg	105			80-120		
Cadmium	100		99.9		mg/Kg	100			80-120		
Chromium	100		97.1		mg/Kg	97			80-120		
Cobalt	100		100		mg/Kg	100			80-120		
Copper	100		103		mg/Kg	103			80-120		
Lead	100		98.0		mg/Kg	98			80-120		
Molybdenum	100		92.8		mg/Kg	93			80-120		
Nickel	100		100		mg/Kg	100			80-120		
Selenium	100		92.8		mg/Kg	93			80-120		
Silver	100		97.0		mg/Kg	97			80-120		
Thallium	100		95.9		mg/Kg	96			80-120		
Vanadium	100		104		mg/Kg	104			80-120		
Zinc	100		99.0		mg/Kg	99			80-120		

Matrix Spike/Matrix Spike Duplicate Summary

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1189874MS1, QC1189874MSD1												**Source: 401373-008**
Antimony	ND	100	100	42.1	39.6	mg/Kg	42	40	6.1	75-125	20	M
Arsenic	4.11	100	100	97.7	93.1	mg/Kg	94	89	4.8	75-125	20	

DRAFT

QCBatchID: QC1189874 **Analyst:** dswafford **Method:** EPA 6010B

Matrix: Solid **Analyzed:** 04/08/2018 **Instrument:** AAICP (group)

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1189874MS1, QC1189874MSD1												**Source: 401373-008**
Barium	78.1	100	100	163	156	mg/Kg	85	78	4.4	75-125	20	
Beryllium	ND	100	100	97.2	98.6	mg/Kg	97	99	1.4	75-125	20	
Cadmium	0.45	100	100	93.8	91.2	mg/Kg	93	91	2.8	75-125	20	
Chromium	12.5	100	100	103	101	mg/Kg	91	89	2.0	75-125	20	
Cobalt	4.61	100	100	98.5	93.7	mg/Kg	94	89	5.0	75-125	20	
Copper	6.98	100	100	98.6	97.3	mg/Kg	92	90	1.3	75-125	20	
Lead	5.60	100	100	97.4	91.6	mg/Kg	92	86	6.1	75-125	20	
Molybdenum	0.49	100	100	86.6	82.7	mg/Kg	86	82	4.6	75-125	20	
Nickel	6.92	100	100	102	97.0	mg/Kg	95	90	5.0	75-125	20	
Selenium	ND	100	100	66.7	66.4	mg/Kg	67	66	0.5	75-125	20	M
Silver	ND	100	100	89.2	87.3	mg/Kg	89	87	2.2	75-125	20	
Thallium	ND	100	100	88.8	84.3	mg/Kg	89	84	5.2	75-125	20	
Vanadium	25.9	100	100	118	115	mg/Kg	92	89	2.6	75-125	20	
Zinc	34.4	100	100	127	122	mg/Kg	93	88	4.0	75-125	20	

DRAFT

QCBatchID: QC1189883	Analyst: Jarriaga	Method: EPA 8015M
Matrix: Solid	Analyzed: 04/09/2018	Instrument: SVOA-GC (group)

Blank Summary

Analyte	Blank Result	Units		RDL	Notes	
QC1189883MB1						
TPH (C10 to C28)	ND	mg/Kg		10		
TPH (C13 to C22)	ND	mg/Kg		10		
TPH (C23 to C40)	ND	mg/Kg		20		
TPH Diesel	ND	mg/Kg		10		
TPH Motor Oil	ND	mg/Kg		20		

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount		Spike Result		Units	Recoveries		RPD	Limits		Notes
	LCS	LCSD	LCS	LCSD		LCS	LCSD		%Rec	RPD	
QC1189883LCS1											
TPH (C10 to C28)	250		240		mg/Kg	96			70-130		

Matrix Spike/Matrix Spike Duplicate Summary

Analyte	Sample Amount	Spike Amount		Spike Result		Units	Recoveries		RPD	Limits		Notes
		MS	MSD	MS	MSD		MS	MSD		%Rec	RPD	
QC1189883MS1, QC1189883MSD1												**Source: 401382-001**
TPH (C10 to C28)	ND	250	250	310	310	mg/Kg	124	124	0.0	70-130	20	

DRAFT

QCBatchID: QC1189962	Analyst: Jarriaga	Method: EPA 8015M
Matrix: Solid	Analyzed: 04/10/2018	Instrument: SVOA-GC (group)

Blank Summary

Analyte	Blank Result	Units		RDL	Notes	
QC1189962MB1						
TPH (C10 to C28)	ND	mg/Kg		10		
TPH (C13 to C22)	ND	mg/Kg		10		
TPH (C23 to C40)	ND	mg/Kg		20		
TPH (C28 to C40)	ND	mg/Kg		20		
TPH (C28 to C44)	ND	mg/Kg		20		
TPH (C8 to C10)	ND	mg/Kg		10		
TPH Diesel	ND	mg/Kg		10		
TPH Motor Oil	ND	mg/Kg		20		

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount LCS	Spike Amount LCSD	Spike Result LCS	Spike Result LCSD	Units	Recoveries LCS	Recoveries LCSD	RPD	Limits %Rec	Limits RPD	Notes
QC1189962LCS1											
TPH (C10 to C28)	250		220		mg/Kg	88			70-130		

Matrix Spike/Matrix Spike Duplicate Summary

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1189962MS1, QC1189962MSD1												**Source: 401318-001**
TPH (C10 to C28)	ND	250	250	260	260	mg/Kg	104		0.0	70-130	20	

DRAFT

QCBatchID: QC1189972 **Analyst:** Abanh **Method:** EPA 8082

Matrix: Solid **Analyzed:** 04/10/2018 **Instrument:** SVOA-GC (group)

Blank Summary

Analyte	Blank Result	Units		RDL	Notes
QC1189972MB1					
PCB-1016	ND	ug/Kg		50	
PCB-1221	ND	ug/Kg		50	
PCB-1232	ND	ug/Kg		50	
PCB-1242	ND	ug/Kg		50	
PCB-1248	ND	ug/Kg		50	
PCB-1254	ND	ug/Kg		50	
PCB-1260	ND	ug/Kg		50	
PCB-1262	ND	ug/Kg		50	
PCB-1268	ND	ug/Kg		50	

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount LCS	Spike Amount LCSD	Spike Result LCS	Spike Result LCSD	Units	Recoveries LCS	Recoveries LCSD	RPD	Limits %Rec	Limits RPD	Notes
QC1189972LCS1											
PCB-1016	500		400		ug/Kg	80			70-130		
PCB-1260	500		500		ug/Kg	100			70-130		

Matrix Spike/Matrix Spike Duplicate Summary

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1189972MS1, QC1189972MSD1												**Source: 401382-001**
PCB-1016	ND	500	500	390	270	ug/Kg	78	54	36.4	70-130	20	
PCB-1260	ND	500	500	380	310	ug/Kg	76	62	20.3	70-130	20	

DRAFT

QCBatchID: QC1190108 **Analyst:** ssabir **Method:** EPA 8270CM

Matrix: Solid **Analyzed:** 04/13/2018 **Instrument:** SVOA-MS (group)

Blank Summary

Analyte	Blank Result	Units		RDL	Notes
QC1190108MB1					
1-Methylnaphthalene	ND	ug/Kg		10	
2-Methylnaphthalene	ND	ug/Kg		10	
Acenaphthene	ND	ug/Kg		10	
Acenaphthylene	ND	ug/Kg		10	
Anthracene	ND	ug/Kg		10	
Benz(a)anthracene	ND	ug/Kg		10	
Benzo(a)pyrene	ND	ug/Kg		10	
Benzo(b)fluoranthene	ND	ug/Kg		10	
Benzo(g,h,i)perylene	ND	ug/Kg		10	
Benzo(k)fluoranthene	ND	ug/Kg		10	
Chrysene	ND	ug/Kg		10	
Dibenz(a,h)anthracene	ND	ug/Kg		10	
Fluoranthene	ND	ug/Kg		10	
Fluorene	ND	ug/Kg		10	
Indeno(1,2,3-cd)pyrene	ND	ug/Kg		10	
Naphthalene	ND	ug/Kg		10	
Phenanthrene	ND	ug/Kg		10	
Pyrene	ND	ug/Kg		10	

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount LCS	Spike Amount LCSD	Spike Result LCS	Spike Result LCSD	Units	Recoveries LCS	Recoveries LCSD	RPD	Limits %Rec	Limits RPD	Notes
QC1190108LCS1											
1-Methylnaphthalene	50		36		ug/Kg	72			70-130		
2-Methylnaphthalene	50		45		ug/Kg	90			70-130		
Acenaphthene	50		42		ug/Kg	84			70-130		
Acenaphthylene	50		44		ug/Kg	88			70-130		
Anthracene	50		45		ug/Kg	90			70-130		
Benz(a)anthracene	50		50		ug/Kg	100			70-130		
Benzo(a)pyrene	50		50		ug/Kg	100			70-130		
Benzo(b)fluoranthene	50		50		ug/Kg	100			70-130		
Benzo(g,h,i)perylene	50		42		ug/Kg	84			70-130		
Benzo(k)fluoranthene	50		49		ug/Kg	98			70-130		
Chrysene	50		44		ug/Kg	88			70-130		
Dibenz(a,h)anthracene	50		47		ug/Kg	94			70-130		
Fluoranthene	50		49		ug/Kg	98			70-130		
Fluorene	50		44		ug/Kg	88			70-130		
Indeno(1,2,3-cd)pyrene	50		48		ug/Kg	96			70-130		
Naphthalene	50		42		ug/Kg	84			70-130		
Phenanthrene	50		46		ug/Kg	92			70-130		
Pyrene	50		48		ug/Kg	96			70-130		

Matrix Spike/Matrix Spike Duplicate Summary

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1190108MS1, QC1190108MSD1												**Source: 401382-001**
1-Methylnaphthalene	ND	50	50	31	36	ug/Kg	62	72	14.9	70-130	35	M
2-Methylnaphthalene	ND	50	50	38	45	ug/Kg	76	90	16.9	70-130	35	
Acenaphthene	ND	50	50	37	43	ug/Kg	74	86	15.0	70-130	35	
Acenaphthylene	ND	50	50	37	44	ug/Kg	74	88	17.3	70-130	35	
Anthracene	ND	50	50	39	45	ug/Kg	78	90	14.3	70-130	35	

DRAFT

QCBatchID: QC1190108	Analyst: ssabir	Method: EPA 8270CM
Matrix: Solid	Analyzed: 04/13/2018	Instrument: SVOA-MS (group)

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1190108MS1, QC1190108MSD1												**Source: 401382-001**
Benz(a)anthracene	ND	50	50	37	50	ug/Kg	74	100	29.9	70-130	35	
Benzo(a)pyrene	ND	50	50	43	51	ug/Kg	86	102	17.0	70-130	35	
Benzo(b)fluoranthene	ND	50	50	42	52	ug/Kg	84	104	21.3	70-130	35	
Benzo(g,h,i)perylene	ND	50	50	34	42	ug/Kg	68	84	21.1	70-130	35	M
Benzo(k)fluoranthene	ND	50	50	42	53	ug/Kg	84	106	23.2	70-130	35	
Chrysene	ND	50	50	36	45	ug/Kg	72	90	22.2	70-130	35	
Dibenz(a,h)anthracene	ND	50	50	38	44	ug/Kg	76	88	14.6	70-130	35	
Fluoranthene	ND	50	50	40	48	ug/Kg	80	96	18.2	70-130	35	
Fluorene	ND	50	50	38	45	ug/Kg	76	90	16.9	70-130	35	
Indeno(1,2,3-cd)pyrene	ND	50	50	39	48	ug/Kg	78	96	20.7	70-130	35	
Naphthalene	ND	50	50	36	42	ug/Kg	72	84	15.4	70-130	35	
Phenanthrene	ND	50	50	38	45	ug/Kg	76	90	16.9	70-130	35	
Pyrene	ND	50	50	39	47	ug/Kg	78	94	18.6	70-130	35	

DRAFT

QCBatchID: QC1190193	**Analyst:** Abanh	**Method:** EPA 8082	
Matrix: Solid	**Analyzed:** 04/16/2018	**Instrument:** SVOA-GC (group)	

Blank Summary

Analyte	Blank Result	Units		RDL	Notes
QC1190193MB1					
PCB-1016	ND	ug/Kg		50	
PCB-1221	ND	ug/Kg		50	
PCB-1232	ND	ug/Kg		50	
PCB-1242	ND	ug/Kg		50	
PCB-1248	ND	ug/Kg		50	
PCB-1254	ND	ug/Kg		50	
PCB-1260	ND	ug/Kg		50	
PCB-1262	ND	ug/Kg		50	
PCB-1268	ND	ug/Kg		50	

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount LCS	Spike Amount LCSD	Spike Result LCS	Spike Result LCSD	Units	Recoveries LCS	Recoveries LCSD	RPD	Limits %Rec	Limits RPD	Notes
QC1190193LCS1											
PCB-1016	500		370		ug/Kg	74			70-130		
PCB-1260	500		400		ug/Kg	80			70-130		

Matrix Spike/Matrix Spike Duplicate Summary

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1190193MS1, QC1190193MSD1												**Source: 401382-001**
PCB-1016	ND	500	500	390	360	ug/Kg	78	72	8.0	70-130	20	
PCB-1260	ND	500	500	410	380	ug/Kg	82	76	7.6	70-130	20	

DRAFT

Data Qualifiers and Definitions

Qualifiers

A	See Report Comments.
B	Analyte was present in an associated method blank.
B1	Analyte was present in a sample and associated method blank greater than MDL but less than RDL.
BQ1	No valid test replicates. Sample Toxicity is possible. Best result was reported.
BQ2	No valid test replicates.
BQ3	No valid test replicates. Final DO is less than 1.0 mg/L. Result may be greater.
C	Possible laboratory contamination.
D	RPD was not within control limits. The sample data was reported without further clarification.
D1	Lesser amount of sample was used due to insufficient amount of sample supplied.
D2	Reporting limit is elevated due to sample matrix. Target analyte was not detected above the elevated reporting limit.
D3	Insufficient sample was supplied for TCLP. Client was notified. TCLP was performed per the Client's instructions.
DW	Sample result is calculated on a dry weigh basis.
E	Concentration is estimated because it exceeds the quantification limits of the method.
I	The sample was read outside of the method required incubation period.
J	Reported value is estimated
L	The laboratory control sample (LCS) or laboratory control sample duplicate (LCSD) was out of control limits. Associated sample data was reported with qualifier.
M	The matrix spike (MS) or matrix spike duplicate (MSD) was not within control limits due to matrix interference. The associated LCS and/or LCSD was within control limits and the sample data was reported without further clarification.
M1	The matrix spike (MS) or matrix spike duplicate (MSD) is not within control limits due to matrix interference.
M2	The matrix spike (MS) or matrix spike duplicate (MSD) was not within control limits. The associated LCS and/or LCSD was not within control limits. Sample result is estimated.
N1	Sample chromatography does not match the specified TPH standard pattern.
NC	The analyte concentration in the sample exceeded the spike level by a factor of four or greater, spike recovery and limits do not apply.
P	Sample was received without proper preservation according to EPA guidelines.
P1	Temperature of sample storage refrigerator was out of acceptance limits.
P2	The sample was preserved within 24 hours of collection in accordance with EPA 218.6.
P3	Per Client request, sample was composited for volatile analysis. Sample compositing for volatile analysis is not recommended due to potential loss of target analytes. Results may be biased low.
Q1	Analyte Calibration Verification exceeds criteria. The result is estimated.
Q2	Analyte calibration was not verified and the result was estimated.
Q3	Analyte initial calibration was not available or exceeds criteria. The result was estimated.
S	The surrogate recovery was out of control limits due to matrix interference. The associated method blank surrogate recovery was within control limits and the sample data was reported without further clarification.
S1	The associated surrogate recovery was out of control limits; result is estimated.
S2	The surrogate was diluted out due to the presence of high concentrations of target and/or non-target compounds. Surrogate recoveries in the associated batch QC met recovery criteria.
S3	Internal Standard did not meet recovery limits. Analyte concentration is estimated.
T	Sample was extracted/analyzed past the holding time.
T1	Reanalysis was reported past hold time due to failing replicates in the original analysis (BOD only).
T2	Sample was analyzed ASAP but received and analyzed past the 15 minute holding time.
T3	Sample received and analyzed out of hold time per client's request.
T4	Sample was analyzed out of hold time per client's request.
T5	Reanalysis was reported past hold time. The original analysis was within hold time, but not reportable.
T6	Hold time is indeterminable due to unspecified sampling time.
T7	Sample was analyzed past hold time due to insufficient time remaining at time of receipt.

Definitions

DF	Dilution Factor
MDL	Method Detection Limit. Result is reported ND when it is less than or equal to MDL.
ND	Analyte was not detected or was less than the detection limit.
NR	Not Reported. See Report Comments.
RDL	Reporting Detection Limit
TIC	Tentatively Identified Compounds

DRAFT

From: Tyler Steimel
To: Diane Galvan
Subject: RE: Sears Brea Mall, LR# 401382
Date: Friday, April 06, 2018 1:04:43 PM
Attachments: image001.png

Date is 4/4/18.

I have the time as 1445 in my notes, unless there is a time noted on the lid of the sample.

Thanks,

Tyler Steimel
Staff Scientist

Apex Companies, LLC
10675 Sorrento Valley Rd. Suite 203
San Diego, CA 92121

O) 858-558-1120 M) 619-540-3067

Add me to your contact list!

Follow Apex on and Like us on

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From: Diane Galvan [mailto:diane.galvan@enthalpy.com]
Sent: Friday, April 06, 2018 1:01 PM
To: Tyler Steimel <Tyler.Steimel@apexcos.com>
Subject: Sears Brea Mall, LR# 401382

Hi Tyler,

Happy Friday! I'd like to confirm if the collection date for sample D5-1 is 4/4/18 and the collection time? Please advise.

Thanks,

ENTHALPY ANALYTICAL

Diane Galvan
Senior Project Manager
West Coast

Enthalpy Analytical
931 W. Barkley Ave., Orange, CA 92868
O: 714.771.6900 D: 714.771.9928 M: 714.812.8119
diane.galvan@enthalpy.com

DRAFT

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DRAFT

ENTHALPY ANALYTICAL		Chain of Custody Record		Turn Around Time (Rush by advanced notice only)								
931 W. Barkley Ave., Orange, CA 92868	ENTHALPY analytical, inc.	Lab No: 401382		Standard:		4 Day:		3 Day:	
Phone: (714) 771-6900 Fax: (714) 538-1209		Page: 1 of 3		2 Day:		1 Day:		Same Day:	
Billing: Enthalpy Analytical		Matrix: A = Air DW = Drinking Water FL = Food Liquid FS = Food Solid L = Liquid PP = Pure Product S = Solid SeaW = Sea Water SW = Swab W = Water WP = Wipe O = Other		Preservatives: 1 = $Na_2S_2O_3$ 2 = HCl 3 = HNO_3 4 = H_2SO_4 5 = NaOH 6 = Other	
1 Park Plaza, Suite 1000					
Irvine, CA 92614					

CUSTOMER INFORMATION		PROJECT INFORMATION	
Company:	Apex Companies	Name:	Sears Brea Mall
Report To:	Paul Garcia	Number:	
Email:	paul.garcia@apexcos.com	P.O. #:	3616-A1000-003
Address:	10675 Sorrento Valley Road STE 203	Address:	100 Brea Mall
	San Diego, CA 92121		Brea, CA 92821
Phone:	858-558-1120	Global ID:	
Fax:	858-558-1121	Sampled By:	Tyler Steimel

	Sample ID	Sampling Date	Sampling Time	Matrix	Container No. / Size	Pres.	TPH Extended Range (8015B)	VOCs (8260B)	PCBs (8082)	PAHs (8270 SIM)	Luft-5 Metals (6010B)	Test Instructions / Comments
1	D1-2	4/3/18	1628	S	8oz,4oz,340mL	5035	X	X	X	X	X	1 week Turn.
2	D1-4	"	1632	S	"	"						Hold
3	L4-3	4/4/18	920	S	8+4 oz		X		X			
4	L4-8	"	940	S	"							Hold
5	L4-12	"	950	S	"							Hold
6	L10-5	"	1050	"	"		X		X			
7	L10-8	"	1030	"	"							Hold
8	L10-12	"	1035	"	"							Hold
9	L11-3	"	1102	"	"		X		X			
10	L11-7	"	1127	"	"							Hold

	Signature	Print Name	Company / Title	Date / Time
1 Relinquished By:		Tyler Steimel	Apex	4/4/18, 1610
1 Received By:		HAO TRAN	Enthalpy	4-4-18 4:10 pm
2 Relinquished By:		HAO TRAN	"	4-4-18 4:37 pm
2 Received By:		G Kim	GA	4/4/18 1637
3 Relinquished By:				
3 Received By:				

0.7/4.4

ENTHALPY ANALYTICAL	Chain of Custody Record	Turn Around Time (Rush by advanced notice only)
931 W. Barkley Ave., Orange, CA 92868 Phone: (714) 771-6900 Fax: (714) 538-1209	Lab No: Page: 2 of 3	Standard: 4 Day: 3 Day: 2 Day: 1 Day: Same Day:
Billing: Enthalpy Analytical 1 Park Plaza, Suite 1000 Irvine, CA 92614	**Matrix:** A = Air DW = Drinking Water FL = Food Liquid FS = Food Solid L = Liquid PP = Pure Product S = Solid SeaW = Sea Water SW = Swab W = Water WP = Wipe O = Other	**Preservatives:** 1 = $Na_2S_2O_3$ 2 = HCl 3 = HNO_3 4 = H_2SO_4 5 = NaOH 6 = Other

CUSTOMER INFORMATION		PROJECT INFORMATION	
Company:	Apex Companies	Name:	Sears Brea Mall
Report To:	Paul Garcia	Number:	
Email:	paul.garcia@apexcos.com	P.O. #:	3616-A1000-003
Address:	10675 Sorrento Valley Road STE 203	Address:	100 Brea Mall
	San Diego, CA 92121		Brea, CA 92821
Phone:	858-558-1120	Global ID:	
Fax:	858-558-1121	Sampled By:	Tyler Steimel

	Sample ID	Sampling Date	Sampling Time	Matrix	Container No. / Size	Pres.	TPH Extended Range (8015B)	VOCs (8260B)	PCBs (8082)	PAHs (8270 SIM)	Luft-5 Metals (6010B)	Test Instructions / Comments
1	L11-9	4/4/18	1130	S	8 oz	N/A						Hold
2	L11-12	"	1135	S	4oz+8oz	N/A						Hold
3	L12-1	"	1241	"	"	"	X		X			
4	L12-7	"	~~1240~~ 1250	"	"	"						Hold
5	L12-12	"	1245	"	"	"						Hold
6	D2-1	"	1200	"	4+8 oz, 3, 40mL	5035						Hold
7	D2-4	"	1203	"	"	5035	X	X	X	X	X	~~Hold~~
8	D3-1	"	1233		"	"	X	X	X	X	X	
9	D3-4	"	1230									Hold
10	D5-1						X	X	X	X	X	

	Signature	Print Name	Company / Title	Date / Time
[1] Relinquished By:		Tyler Steimel	Apex	4/4/18, 1610
[1] Received By:		HAO TRAN	Enthalpy	4-4-18 4:10 pm
[2] Relinquished By:		HAO TRAN	"	4-4-18 4:37 pm
[2] Received By:		G Kim	CX	4/4/18 1637
[3] Relinquished By:				
[3] Received By:				

0.7144

ENTHALPY ANALYTICAL		Chain of Custody Record		Turn Around Time (Rush by advanced notice only)										
931 W. Barkley Ave., Orange, CA 92868	ENTHALPY analytical, inc.	Lab No:		Standard:		4 Day:		3 Day:						
Phone: (714) 771-6900 Fax: (714) 538-1209		Page: 3 of 3		2 Day:		1 Day:		Same Day:						
Billing: Enthalpy Analytical		Matrix: A = Air DW = Drinking Water FL = Food Liquid FS = Food Solid L = Liquid PP = Pure Product S = Solid SeaW = Sea Water SW = Swab W = Water WP = Wipe O = Other		Preservatives: 1 = $Na_2S_2O_3$ 2 = HCl 3 = HNO_3 4 = H_2SO_4 5 = NaOH 6 = Other										
1 Park Plaza, Suite 1000														
Irvine, CA 92614														

CUSTOMER INFORMATION		PROJECT INFORMATION	
Company:	Apex Companies	Name:	Sears Brea Mall
Report To:	Paul Garcia	Number:	
Email:	paul.garcia@apexcos.com	P.O. #:	3616-A1000-003
Address:	10675 Sorrento Valley Road STE 203	Address:	100 Brea Mall
	San Diego, CA 92121		Brea, CA 92821
Phone:	858-558-1120	Global ID:	
Fax:	858-558-1121	Sampled By:	Tyler Steimel

	Sample ID	Sampling Date	Sampling Time	Matrix	Container No. / Size	Pres.	TPH Extended Range (8015B)	VOCs (8260B)	PCBs (8082)	PAHs (8270 SIM)	Luft-5 Metals (6010B)	Test Instructions / Comments
1	D5-4	4/4/18	1500	S	1402, 3,40mL	5035						Hold
2	D6-1	"	1150	"	"	"	X	X	X	X	X	
3	D6-4	"	1152	"	"	"						Hold
4												
5												
6												
7												
8												
9												
10												

Analysis Request

Test Instructions / Comments: 1 week Turn.

	Signature	Print Name	Company / Title	Date / Time
1 Relinquished By:		Tyler Steimel	Apex	4/4/18, 1610
1 Received By:			Enthalpy	4-4-18 4:10 pm
2 Relinquished By:				4-4-18 4:37 pm
2 Received By:				4/4/18 1637
3 Relinquished By:				
3 Received By:				

0.7|4.4

ENTHALPY ANALYTICAL

SAMPLE ACCEPTANCE CHECKLIST

Section 1

Client: Apex

Project: Sears Brea Mall

Date Received: 4/4/18

Sampler's Name Present: ☑ Yes ☐ No

Section 2

Sample(s) received in a cooler? ☑ Yes, How many? 1 ☐ No (skip section 2)

Sample Temp (°C) (No Cooler): _____

Sample Temp (°C), One from each cooler: #1: 4.4 #2: _____ #3: _____ #4: _____

(Acceptance range is < 6°C but not frozen (for Microbiology samples, acceptance range is < 10°C but not frozen). It is acceptable for samples collected the same day as sample receipt to have a higher temperature as long as there is evidence that cooling has begun.)

Shipping Information: _____

Section 3

Was the cooler packed with: ☑ Ice ☐ Ice Packs ☐ Bubble Wrap ☐ Styrofoam ☐ Paper ☐ None ☐ Other _____

Cooler Temp (°C): #1: 0.7 #2: _____ #3: _____ #4: _____

Section 4	YES	NO	N/A
Was a COC received?	✓		
Are sample IDs present?	✓		
Are sampling dates & times present?	✓		
Is a relinquished signature present?		✓	
Are the tests required clearly indicated on the COC?	✓		
Are custody seals present?		✓	
If custody seals are present, were they intact?			✓
Are all samples sealed in plastic bags? (Recommended for Microbiology samples)	✓		
Did all samples arrive intact? If no, indicate in Section 4 below.	✓		
Did all bottle labels agree with COC? (ID, dates and times)	✓		
Were the samples collected in the correct containers for the required tests?	✓		
Are the containers labeled with the correct preservatives?	✓		
Is there headspace in the VOA vials greater than 5-6 mm in diameter?			✓
Was a sufficient amount of sample submitted for the requested tests?	✓		

Section 5 Explanations/Comments

Sample 20: No sample dates or time

Section 6

For discrepancies, how was the Project Manager notified? ☐ Verbal PM Initials: _____ Date/Time _____

☐ Email (email sent to/on): _____ / _____

Project Manager's response:

Completed By: _____ Date: 4/4/18

DRAFT

Enthalpy Analytical, LLC
931 W. Barkley Ave - Orange, CA 92868
Tel: (714)771-6900 Fax: (714)538-1209
www.enthalpy.com
info-sc@enthalpy.com

MONTROSE ENVIRONMENTAL

Client: APEX
Address: 10675 Sorrento Valley Rd.
Suite 203
San Diego, CA 92121
Attn: Paul Garcia

Lab Request: 401424
Report Date: 04/19/2018
Date Received: 04/05/2018
Client ID: 10359

Comments: Sears Brea Mall
3616-A1000-003
100 Brea Mall, Brea, CA 92821

This laboratory request covers the following listed samples which were analyzed for the parameters indicated on the attached Analytical Result Report. All analyses were conducted using the appropriate methods. Methods accredited by NELAC are indicated on the report. This cover letter is an integral part of the final report.

Sample #	Client Sample ID
401424-002	OT1-4
401424-009	L1-4
401424-013	L2-3
401424-016	L3-2
401424-020	L4-2
401424-026	L14-3
401424-029	L15-1
401424-034	D4-4
401424-035	OW1-1
401424-040	OW2-1
401424-046	OW3-2
401424-049	L16-2
401424-052	OW4-1

DRAFT

Thank you for the opportunity to be of service to your company. Please feel free to call if there are any questions regarding this report or if we can be of further service.

Diane M. Galvan

Report Review performed by: Diane Galvan, Project Manager

NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 60 days from date received.

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ACCREDITED IN ACCORDANCE WITH nelac

Matrix: Solid	**Client:** APEX			**Collector:** Client	
Sampled: 04/04/2018 16:20	**Site:**				
Sample #: **401424-002**	**Client Sample #:** OT1-4			**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 6010B *NELAC* Prep Method: EPA 3050B						QCBatchID: QC1189875		
Cadmium	**0.67**	1	0.5	mg/Kg	04/06/18	04/09/18	SBW	
Chromium	**13.1**	1	1	mg/Kg	04/06/18	04/09/18	SBW	
Lead	**5.32**	1	1	mg/Kg	04/06/18	04/09/18	SBW	
Nickel	**13.5**	1	1.5	mg/Kg	04/06/18	04/09/18	SBW	
Zinc	**29.5**	1	5	mg/Kg	04/06/18	04/09/18	SBW	
Method: EPA 8015B *NELAC* Prep Method: EPA 5030						QCBatchID: QC1189937		
TPH Gasoline	ND	1	3	mg/Kg		04/10/18	EW	
Surrogate	*% Recovery*		*Limits*	*Notes*				
4-Bromofluorobenzene (SUR)	*90*		*60-140*					
Method: EPA 8015M Prep Method: EPA 3580A						QCBatchID: QC1189883		
TPH Diesel	ND	1	10	mg/Kg	04/09/18	04/17/18	BB	
TPH Motor Oil	**650**	1	20	mg/Kg	04/09/18	04/17/18	BB	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Triacontane (SUR)	*00*		*50-150*	*S2*	*Surrogate is diluted out*			
Method: EPA 8082 *NELAC* Prep Method: EPA 3545						QCBatchID: QC1189972		
PCB-1016	ND	20	1000	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1221	ND	20	1000	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1232	ND	20	1000	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1242	ND	20	1000	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1248	ND	20	1000	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1254	ND	20	1000	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1260	ND	20	1000	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1262	ND	20	1000	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1268	ND	20	1000	ug/Kg	04/10/18	04/13/18	MTS	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Decachlorobiphenyl DCB (SUR)	*00*		*50-150*	*S2*	*Surrogate high due to interference and ba*			
Method: EPA 8260B *NELAC* Prep Method: EPA 5035A						QCBatchID: QC1190001		
1,1,1,2-Tetrachloroethane	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,1,1-Trichloroethane	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,1,2,2-Tetrachloroethane	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,1,2-Trichloroethane	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,1,2-Trichlorotrifluoroethane	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,1-Dichloroethane	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,1-Dichloroethene	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,1-Dichloropropene	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2,3-Trichlorobenzene	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2,3-Trichloropropane	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2,4-Trichlorobenzene	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2,4-Trimethylbenzene	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2-Dibromo-3-chloropropane	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2-Dibromoethane	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2-Dichlorobenzene	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2-Dichloroethane	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2-Dichloropropane	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,3,5-Trimethylbenzene	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,3-Dichlorobenzene	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,3-Dichloropropane	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,4-Dichlorobenzene	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
2,2-Dichloropropane	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
2-Butanone (MEK)	ND	1.06	106	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
2-Chloroethyl Vinyl Ether	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	

DRAFT

Matrix:	Solid	**Client:**	APEX	**Collector:**	Client
Sampled:	04/04/2018 16:20	**Site:**			
Sample #:	**401424-002**	**Client Sample #:**	OT1-4	**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
2-Chlorotoluene	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
4-Chlorotoluene	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
4-Isopropyltoluene	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
4-Methyl-2-pentanone (MIBK)	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Acetone	ND	1.06	106	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Allyl Chloride	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Benzene	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Bromobenzene	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Bromochloromethane	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Bromodichloromethane	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Bromoform	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Bromomethane	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Carbon Tetrachloride	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Chlorobenzene	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Chlorodibromomethane	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Chloroethane	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Chloroform	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Chloromethane	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
cis-1,2-Dichloroethene	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
cis-1,3-dichloropropene	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
cis-1,4-dichloro-2-butene	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Dibromomethane	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Dichlorodifluoromethane	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Di-isopropyl ether (DIPE)	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Ethylbenzene	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Ethyl-tertbutylether (ETBE)	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Hexachlorobutadiene	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Isopropylbenzene	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
m and p-Xylene	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Methylene chloride	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Methyl-t-butyl Ether (MTBE)	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Naphthalene	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
N-butylbenzene	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
N-propylbenzene	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
o-Xylene	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Sec-butylbenzene	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Styrene	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
t-Butyl alcohol (TBA)	ND	1.06	10.6	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Tert-amylmethylether (TAME)	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Tert-butylbenzene	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Tetrachloroethene	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Toluene	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
trans-1,2-dichloroethene	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
trans-1,3-dichloropropene	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
trans-1,4-dichloro-2-butene	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Trichloroethene	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Trichlorofluoromethane	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Vinyl Chloride	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Xylenes (Total)	ND	1.06	5.3	ug/Kg	04/10/18 00:00	04/10/18	ZZ	

DRAFT

Matrix:	Solid	**Client:**	APEX	**Collector:**	Client
Sampled:	04/04/2018 16:20	**Site:**			
Sample #:	**401424-002**	**Client Sample #:**	OT1-4	**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Surrogate	*% Recovery*		*Limits*	*Notes*				
1,2-Dichloroethane-d4 (SUR)	*100*		*70-145*					
4-Bromofluorobenzene (SUR)	*113*		*70-145*					
Dibromofluoromethane (SUR)	*97*		*70-145*					
Toluene-d8 (SUR)	*100*		*70-145*					
Method: EPA 8270CM	Prep Method: EPA 3545					QCBatchID: QC1190108		
1-Methylnaphthalene	ND	100	1000	ug/Kg	04/13/18	04/13/18	DP	D2
2-Methylnaphthalene	ND	100	1000	ug/Kg	04/13/18	04/13/18	DP	D2
Acenaphthene	ND	100	1000	ug/Kg	04/13/18	04/13/18	DP	D2
Acenaphthylene	ND	100	1000	ug/Kg	04/13/18	04/13/18	DP	D2
Anthracene	ND	100	1000	ug/Kg	04/13/18	04/13/18	DP	D2
Benz(a)anthracene	ND	100	1000	ug/Kg	04/13/18	04/13/18	DP	D2
Benzo(a)pyrene	ND	100	1000	ug/Kg	04/13/18	04/13/18	DP	D2
Benzo(b)fluoranthene	ND	100	1000	ug/Kg	04/13/18	04/13/18	DP	D2
Benzo(g,h,i)perylene	ND	100	1000	ug/Kg	04/13/18	04/13/18	DP	D2
Benzo(k)fluoranthene	ND	100	1000	ug/Kg	04/13/18	04/13/18	DP	D2
Chrysene	ND	100	1000	ug/Kg	04/13/18	04/13/18	DP	D2
Dibenz(a,h)anthracene	ND	100	1000	ug/Kg	04/13/18	04/13/18	DP	D2
Fluoranthene	ND	100	1000	ug/Kg	04/13/18	04/13/18	DP	D2
Fluorene	ND	100	1000	ug/Kg	04/13/18	04/13/18	DP	D2
Indeno(1,2,3-cd)pyrene	ND	100	1000	ug/Kg	04/13/18	04/13/18	DP	D2
Naphthalene	ND	100	1000	ug/Kg	04/13/18	04/13/18	DP	D2
Phenanthrene	ND	100	1000	ug/Kg	04/13/18	04/13/18	DP	D2
Pyrene	ND	100	1000	ug/Kg	04/13/18	04/13/18	DP	D2
Surrogate	*% Recovery*		*Limits*	*Notes*				
2-Fluorobiphenyl (SUR)	*97*		*30-120*					
Nitrobenzene-d5 (SUR)	*97*		*27-125*					
p-Terphenyl (SUR)	*89*		*33-155*					

DRAFT

Matrix: Solid **Client:** APEX **Collector:** Client
Sampled: 04/05/2018 10:25 **Site:**
Sample #: **401424-009** **Client Sample #:** L1-4 **Sample Type:**

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 8015B NELAC Prep Method: EPA 5030						QCBatchID: QC1189937		
TPH Gasoline	ND	1	3	mg/Kg		04/10/18	EW	
Surrogate	*% Recovery*		*Limits*	*Notes*				
4-Bromofluorobenzene (SUR)	*95*		*60-140*					
Method: EPA 8015M Prep Method: EPA 3580A						QCBatchID: QC1189883		
TPH Diesel	ND	1	10	mg/Kg	04/09/18	04/10/18	BB	
TPH Motor Oil	ND	1	20	mg/Kg	04/09/18	04/10/18	BB	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Triacontane (SUR)	*106*		*50-150*					
Method: EPA 8082 NELAC Prep Method: EPA 3545						QCBatchID: QC1189972		
PCB-1016	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1221	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1232	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1242	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1248	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1254	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1260	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1262	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1268	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Decachlorobiphenyl DCB (SUR)	*58*		*50-150*					

Matrix: Solid **Client:** APEX **Collector:** Client
Sampled: 04/05/2018 12:20 **Site:**
Sample #: **401424-013** **Client Sample #:** L2-3 **Sample Type:**

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 8015B NELAC Prep Method: EPA 5030						QCBatchID: QC1189937		
TPH Gasoline	ND	1	3	mg/Kg		04/10/18	EW	
Surrogate	*% Recovery*		*Limits*	*Notes*				
4-Bromofluorobenzene (SUR)	*90*		*60-140*					
Method: EPA 8015M Prep Method: EPA 3580A						QCBatchID: QC1189883		
TPH Diesel	ND	1	10	mg/Kg	04/09/18	04/10/18	BB	
TPH Motor Oil	ND	1	20	mg/Kg	04/09/18	04/10/18	BB	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Triacontane (SUR)	*105*		*50-150*					
Method: EPA 8082 NELAC Prep Method: EPA 3545						QCBatchID: QC1189972		
PCB-1016	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1221	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1232	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1242	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1248	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1254	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1260	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1262	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1268	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Decachlorobiphenyl DCB (SUR)	*68*		*50-150*					

DRAFT

Matrix: Solid **Client:** APEX **Collector:** Client
Sampled: 04/05/2018 11:50 **Site:**
Sample #: **401424-016** **Client Sample #:** L3-2 **Sample Type:**

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 8015B NELAC Prep Method: EPA 5030						QCBatchID: QC1189937		
TPH Gasoline	ND	1	3	mg/Kg		04/10/18	EW	
Surrogate	*% Recovery*		*Limits*	*Notes*				
4-Bromofluorobenzene (SUR)	*90*		*60-140*					
Method: EPA 8015M Prep Method: EPA 3580A						QCBatchID: QC1189883		
TPH Diesel	ND	1	10	mg/Kg	04/09/18	04/10/18	BB	
TPH Motor Oil	**24**	1	20	mg/Kg	04/09/18	04/10/18	BB	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Triacontane (SUR)	*106*		*50-150*					
Method: EPA 8082 NELAC Prep Method: EPA 3545						QCBatchID: QC1189972		
PCB-1016	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1221	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1232	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1242	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1248	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1254	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1260	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1262	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1268	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Decachlorobiphenyl DCB (SUR)	*74*		*50-150*					

Matrix: Solid **Client:** APEX **Collector:** Client
Sampled: 04/05/2018 12:43 **Site:**
Sample #: **401424-020** **Client Sample #:** L4-2 **Sample Type:**

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 8015B NELAC Prep Method: EPA 5030						QCBatchID: QC1189937		
TPH Gasoline	ND	1	3	mg/Kg		04/10/18	EW	
Surrogate	*% Recovery*		*Limits*	*Notes*				
4-Bromofluorobenzene (SUR)	*90*		*60-140*					
Method: EPA 8015M Prep Method: EPA 3580A						QCBatchID: QC1189883		
TPH Diesel	**17**	1	10	mg/Kg	04/09/18	04/10/18	BB	
TPH Motor Oil	**20**	1	20	mg/Kg	04/09/18	04/10/18	BB	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Triacontane (SUR)	*102*		*50-150*					
Method: EPA 8082 NELAC Prep Method: EPA 3545						QCBatchID: QC1189972		
PCB-1016	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1221	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1232	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1242	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1248	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1254	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1260	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1262	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1268	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Decachlorobiphenyl DCB (SUR)	*76*		*50-150*					

DRAFT

Matrix: Solid **Client:** APEX **Collector:** Client
Sampled: 04/05/2018 16:25 **Site:**
Sample #: **401424-026** **Client Sample #:** L14-3 **Sample Type:**

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 8015B NELAC Prep Method: EPA 5030						QCBatchID: QC1189937		
TPH Gasoline	ND	1	3	mg/Kg		04/10/18	EW	
Surrogate	*% Recovery*		*Limits*	*Notes*				
4-Bromofluorobenzene (SUR)	*95*		*60-140*					
Method: EPA 8015M Prep Method: EPA 3580A						QCBatchID: QC1189883		
TPH Diesel	ND	1	10	mg/Kg	04/09/18	04/10/18	BB	
TPH Motor Oil	ND	1	20	mg/Kg	04/09/18	04/10/18	BB	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Triacontane (SUR)	*98*		*50-150*					
Method: EPA 8082 NELAC Prep Method: EPA 3545						QCBatchID: QC1189972		
PCB-1016	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1221	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1232	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1242	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1248	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1254	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1260	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1262	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1268	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Decachlorobiphenyl DCB (SUR)	*78*		*50-150*					

Matrix: Solid **Client:** APEX **Collector:** Client
Sampled: 04/05/2018 08:35 **Site:**
Sample #: **401424-029** **Client Sample #:** L15-1 **Sample Type:**

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 8015B NELAC Prep Method: EPA 5030						QCBatchID: QC1189937		
TPH Gasoline	ND	1	3	mg/Kg		04/10/18	EW	
Surrogate	*% Recovery*		*Limits*	*Notes*				
4-Bromofluorobenzene (SUR)	*95*		*60-140*					
Method: EPA 8015M Prep Method: EPA 3580A						QCBatchID: QC1189883		
TPH Diesel	ND	1	10	mg/Kg	04/09/18	04/17/18	BB	
TPH Motor Oil	ND	1	20	mg/Kg	04/09/18	04/17/18	BB	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Triacontane (SUR)	*100*		*50-150*					
Method: EPA 8082 NELAC Prep Method: EPA 3545						QCBatchID: QC1189972		
PCB-1016	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1221	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1232	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1242	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1248	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1254	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1260	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1262	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1268	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Decachlorobiphenyl DCB (SUR)	*72*		*50-150*					

DRAFT

Matrix:	Solid	**Client:**	APEX	**Collector:**	Client
Sampled:	04/05/2018 10:03	**Site:**			
Sample #:	**401424-034**	**Client Sample #:**	D4-4	**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 6010B *NELAC* Prep Method: EPA 3050B						QCBatchID: QC1189876		
Cadmium	**0.63**	1	0.5	mg/Kg	04/06/18	04/09/18	SBW	
Chromium	**7.02**	1	1	mg/Kg	04/06/18	04/09/18	SBW	
Lead	**1.81**	1	1	mg/Kg	04/06/18	04/09/18	SBW	
Nickel	**6.80**	1	1.5	mg/Kg	04/06/18	04/09/18	SBW	
Zinc	**14.0**	1	5	mg/Kg	04/06/18	04/09/18	SBW	
Method: EPA 8015B *NELAC* Prep Method: EPA 5030						QCBatchID: QC1189937		
TPH Gasoline	ND	1	3	mg/Kg		04/10/18	EW	
Surrogate	*% Recovery*		*Limits*	*Notes*				
4-Bromofluorobenzene (SUR)	*95*		*60-140*					
Method: EPA 8015M Prep Method: EPA 3580A						QCBatchID: QC1189962		
TPH Diesel	ND	1	10	mg/Kg	04/10/18	04/10/18	JAR	
TPH Motor Oil	ND	1	20	mg/Kg	04/10/18	04/10/18	JAR	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Triacontane (SUR)	*45*		*50-150*					
Method: EPA 8082 *NELAC* Prep Method: EPA 3545						QCBatchID: QC1189972		
PCB-1016	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1221	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1232	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1242	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1248	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1254	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1260	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1262	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1268	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Decachlorobiphenyl DCB (SUR)	*74*		*50-150*					
Method: EPA 8260B *NELAC* Prep Method: EPA 5035A						QCBatchID: QC1190001		
1,1,1,2-Tetrachloroethane	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,1,1-Trichloroethane	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,1,2,2-Tetrachloroethane	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,1,2-Trichloroethane	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,1,2-Trichlorotrifluoroethane	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,1-Dichloroethane	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,1-Dichloroethene	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,1-Dichloropropene	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2,3-Trichlorobenzene	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2,3-Trichloropropane	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2,4-Trichlorobenzene	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2,4-Trimethylbenzene	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2-Dibromo-3-chloropropane	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2-Dibromoethane	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2-Dichlorobenzene	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2-Dichloroethane	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2-Dichloropropane	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,3,5-Trimethylbenzene	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,3-Dichlorobenzene	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,3-Dichloropropane	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,4-Dichlorobenzene	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
2,2-Dichloropropane	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
2-Butanone (MEK)	ND	1.16	116	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
2-Chloroethyl Vinyl Ether	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	

DRAFT

Matrix:	Solid	**Client:**	APEX	**Collector:**	Client
Sampled:	04/05/2018 10:03	**Site:**			
Sample #:	**401424-034**	**Client Sample #:**	D4-4	**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
2-Chlorotoluene	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
4-Chlorotoluene	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
4-Isopropyltoluene	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
4-Methyl-2-pentanone (MIBK)	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Acetone	ND	1.16	116	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Allyl Chloride	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Benzene	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Bromobenzene	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Bromochloromethane	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Bromodichloromethane	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Bromoform	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Bromomethane	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Carbon Tetrachloride	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Chlorobenzene	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Chlorodibromomethane	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Chloroethane	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Chloroform	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Chloromethane	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
cis-1,2-Dichloroethene	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
cis-1,3-dichloropropene	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
cis-1,4-dichloro-2-butene	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Dibromomethane	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Dichlorodifluoromethane	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Di-isopropyl ether (DIPE)	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Ethylbenzene	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Ethyl-tertbutylether (ETBE)	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Hexachlorobutadiene	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Isopropylbenzene	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
m and p-Xylene	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Methylene chloride	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Methyl-t-butyl Ether (MTBE)	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Naphthalene	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
N-butylbenzene	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
N-propylbenzene	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
o-Xylene	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Sec-butylbenzene	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Styrene	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
t-Butyl alcohol (TBA)	ND	1.16	11.6	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Tert-amylmethylether (TAME)	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Tert-butylbenzene	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Tetrachloroethene	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Toluene	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
trans-1,2-dichloroethene	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
trans-1,3-dichloropropene	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
trans-1,4-dichloro-2-butene	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Trichloroethene	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Trichlorofluoromethane	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Vinyl Chloride	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Xylenes (Total)	ND	1.16	5.8	ug/Kg	04/10/18 00:00	04/10/18	ZZ	

DRAFT

Matrix:	Solid	**Client:**	APEX	**Collector:**	Client
Sampled:	04/05/2018 10:03	**Site:**			
Sample #:	**401424-034**	**Client Sample #:**	D4-4	**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Surrogate	*% Recovery*		*Limits*	*Notes*				
1,2-Dichloroethane-d4 (SUR)	*100*		*70-145*					
4-Bromofluorobenzene (SUR)	*106*		*70-145*					
Dibromofluoromethane (SUR)	*97*		*70-145*					
Toluene-d8 (SUR)	*98*		*70-145*					
Method: EPA 8270CM	Prep Method: EPA 3545						QCBatchID:	QC1190108
1-Methylnaphthalene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
2-Methylnaphthalene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Acenaphthene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Acenaphthylene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Anthracene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benz(a)anthracene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benzo(a)pyrene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benzo(b)fluoranthene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benzo(g,h,i)perylene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benzo(k)fluoranthene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Chrysene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Dibenz(a,h)anthracene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Fluoranthene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Fluorene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Indeno(1,2,3-cd)pyrene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Naphthalene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Phenanthrene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Pyrene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Surrogate	*% Recovery*		*Limits*	*Notes*				
2-Fluorobiphenyl (SUR)	*75*		*30-120*					
Nitrobenzene-d5 (SUR)	*89*		*27-125*					
p-Terphenyl (SUR)	*86*		*33-155*					

DRAFT

Matrix:	Solid	**Client:**	APEX	**Collector:**	Client
Sampled:	04/05/2018 14:31	**Site:**			
Sample #:	**401424-035**	**Client Sample #:**	OW1-1	**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 6010B *NELAC* Prep Method: EPA 3050B						QCBatchID: QC1189876		
Cadmium	**0.75**	1	0.5	mg/Kg	04/06/18	04/09/18	SBW	
Chromium	**16.0**	1	1	mg/Kg	04/06/18	04/09/18	SBW	
Lead	**3.63**	1	1	mg/Kg	04/06/18	04/09/18	SBW	
Nickel	**15.8**	1	1.5	mg/Kg	04/06/18	04/09/18	SBW	
Zinc	**36.2**	1	5	mg/Kg	04/06/18	04/09/18	SBW	
Method: EPA 8015B *NELAC* Prep Method: EPA 5030						QCBatchID: QC1189937		
TPH Gasoline	ND	1	3	mg/Kg		04/10/18	EW	
Surrogate	*% Recovery*		*Limits*	*Notes*				
4-Bromofluorobenzene (SUR)	*95*		*60-140*					
Method: EPA 8015M Prep Method: EPA 3580A						QCBatchID: QC1189883		
TPH Diesel	ND	1	10	mg/Kg	04/09/18	04/17/18	BB	
TPH Motor Oil	ND	1	20	mg/Kg	04/09/18	04/17/18	BB	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Triacontane (SUR)	*112*		*50-150*					
Method: EPA 8082 *NELAC* Prep Method: EPA 3545						QCBatchID: QC1189972		
PCB-1016	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1221	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1232	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1242	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1248	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1254	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1260	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1262	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1268	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Decachlorobiphenyl DCB (SUR)	*75*		*50-150*					
Method: EPA 8260B *NELAC* Prep Method: EPA 5035A						QCBatchID: QC1190001		
1,1,1,2-Tetrachloroethane	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,1,1-Trichloroethane	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,1,2,2-Tetrachloroethane	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,1,2-Trichloroethane	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,1,2-Trichlorotrifluoroethane	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,1-Dichloroethane	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,1-Dichloroethene	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,1-Dichloropropene	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2,3-Trichlorobenzene	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2,3-Trichloropropane	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2,4-Trichlorobenzene	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2,4-Trimethylbenzene	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2-Dibromo-3-chloropropane	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2-Dibromoethane	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2-Dichlorobenzene	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2-Dichloroethane	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2-Dichloropropane	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,3,5-Trimethylbenzene	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,3-Dichlorobenzene	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,3-Dichloropropane	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,4-Dichlorobenzene	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
2,2-Dichloropropane	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
2-Butanone (MEK)	ND	1.19	119	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
2-Chloroethyl Vinyl Ether	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	

DRAFT

Matrix:	Solid	**Client:**	APEX	**Collector:**	Client
Sampled:	04/05/2018 14:31	**Site:**			
Sample #:	**401424-035**	**Client Sample #:**	OW1-1	**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
2-Chlorotoluene	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
4-Chlorotoluene	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
4-Isopropyltoluene	**23**	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
4-Methyl-2-pentanone (MIBK)	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Acetone	ND	1.19	119	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Allyl Chloride	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Benzene	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Bromobenzene	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Bromochloromethane	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Bromodichloromethane	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Bromoform	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Bromomethane	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Carbon Tetrachloride	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Chlorobenzene	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Chlorodibromomethane	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Chloroethane	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Chloroform	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Chloromethane	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
cis-1,2-Dichloroethene	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
cis-1,3-dichloropropene	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
cis-1,4-dichloro-2-butene	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Dibromomethane	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Dichlorodifluoromethane	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Di-isopropyl ether (DIPE)	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Ethylbenzene	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Ethyl-tertbutylether (ETBE)	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Hexachlorobutadiene	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Isopropylbenzene	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
m and p-Xylene	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Methylene chloride	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Methyl-t-butyl Ether (MTBE)	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Naphthalene	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
N-butylbenzene	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
N-propylbenzene	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
o-Xylene	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Sec-butylbenzene	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Styrene	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
t-Butyl alcohol (TBA)	ND	1.19	11.9	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Tert-amylmethylether (TAME)	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Tert-butylbenzene	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Tetrachloroethene	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Toluene	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
trans-1,2-dichloroethene	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
trans-1,3-dichloropropene	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
trans-1,4-dichloro-2-butene	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Trichloroethene	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Trichlorofluoromethane	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Vinyl Chloride	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Xylenes (Total)	ND	1.19	5.95	ug/Kg	04/10/18 00:00	04/10/18	ZZ	

DRAFT

Matrix:	Solid	**Client:**	APEX	**Collector:**	Client
Sampled:	04/05/2018 14:31	**Site:**			
Sample #:	**401424-035**	**Client Sample #:**	OW1-1	**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Surrogate	*% Recovery*		*Limits*	*Notes*				
1,2-Dichloroethane-d4 (SUR)	*102*		*70-145*					
4-Bromofluorobenzene (SUR)	*97*		*70-145*					
Dibromofluoromethane (SUR)	*97*		*70-145*					
Toluene-d8 (SUR)	*97*		*70-145*					
Method: EPA 8270CM	Prep Method: EPA 3545					QCBatchID: QC1190108		
1-Methylnaphthalene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
2-Methylnaphthalene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Acenaphthene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Acenaphthylene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Anthracene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benz(a)anthracene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benzo(a)pyrene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benzo(b)fluoranthene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benzo(g,h,i)perylene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benzo(k)fluoranthene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Chrysene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Dibenz(a,h)anthracene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Fluoranthene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Fluorene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Indeno(1,2,3-cd)pyrene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Naphthalene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Phenanthrene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Pyrene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Surrogate	*% Recovery*		*Limits*	*Notes*				
2-Fluorobiphenyl (SUR)	*76*		*30-120*					
Nitrobenzene-d5 (SUR)	*96*		*27-125*					
p-Terphenyl (SUR)	*88*		*33-155*					

DRAFT

Matrix: Solid	**Client:** APEX			**Collector:** Client	
Sampled: 04/05/2018 15:56	**Site:**				
Sample #: **401424-040**	**Client Sample #:** OW2-1			**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 6010B *NELAC* Prep Method: EPA 3050B						QCBatchID: QC1189876		
Cadmium	**0.79**	1	0.5	mg/Kg	04/06/18	04/09/18	SBW	
Chromium	**8.06**	1	1	mg/Kg	04/06/18	04/09/18	SBW	
Lead	**1.79**	1	1	mg/Kg	04/06/18	04/09/18	SBW	
Nickel	**9.22**	1	1.5	mg/Kg	04/06/18	04/09/18	SBW	
Zinc	**18.3**	1	5	mg/Kg	04/06/18	04/09/18	SBW	
Method: EPA 8015B *NELAC* Prep Method: EPA 5030						QCBatchID: QC1189937		
TPH Gasoline	ND	1	3	mg/Kg		04/10/18	EW	
Surrogate	*% Recovery*		*Limits*	*Notes*				
4-Bromofluorobenzene (SUR)	*90*		*60-140*					
Method: EPA 8015M Prep Method: EPA 3580A						QCBatchID: QC1189883		
TPH Diesel	ND	1	10	mg/Kg	04/09/18	04/10/18	BB	
TPH Motor Oil	ND	1	20	mg/Kg	04/09/18	04/10/18	BB	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Triacontane (SUR)	*113*		*50-150*					
Method: EPA 8082 *NELAC* Prep Method: EPA 3545						QCBatchID: QC1189972		
PCB-1016	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1221	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1232	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1242	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1248	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1254	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1260	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1262	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1268	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Decachlorobiphenyl DCB (SUR)	*58*		*50-150*					
Method: EPA 8260B *NELAC* Prep Method: EPA 5035A						QCBatchID: QC1190001		
1,1,1,2-Tetrachloroethane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,1,1-Trichloroethane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,1,2,2-Tetrachloroethane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,1,2-Trichloroethane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,1,2-Trichlorotrifluoroethane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,1-Dichloroethane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,1-Dichloroethene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,1-Dichloropropene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2,3-Trichlorobenzene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2,3-Trichloropropane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2,4-Trichlorobenzene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2,4-Trimethylbenzene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2-Dibromo-3-chloropropane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2-Dibromoethane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2-Dichlorobenzene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2-Dichloroethane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2-Dichloropropane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,3,5-Trimethylbenzene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,3-Dichlorobenzene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,3-Dichloropropane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,4-Dichlorobenzene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
2,2-Dichloropropane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
2-Butanone (MEK)	ND	1.11	111	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
2-Chloroethyl Vinyl Ether	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	

DRAFT

Matrix:	Solid	**Client:**	APEX	**Collector:**	Client
Sampled:	04/05/2018 15:56	**Site:**			
Sample #:	**401424-040**	**Client Sample #:**	OW2-1	**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
2-Chlorotoluene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
4-Chlorotoluene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
4-Isopropyltoluene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
4-Methyl-2-pentanone (MIBK)	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Acetone	ND	1.11	111	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Allyl Chloride	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Benzene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Bromobenzene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Bromochloromethane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Bromodichloromethane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Bromoform	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Bromomethane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Carbon Tetrachloride	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Chlorobenzene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Chlorodibromomethane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Chloroethane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Chloroform	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Chloromethane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
cis-1,2-Dichloroethene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
cis-1,3-dichloropropene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
cis-1,4-dichloro-2-butene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Dibromomethane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Dichlorodifluoromethane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Di-isopropyl ether (DIPE)	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Ethylbenzene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Ethyl-tertbutylether (ETBE)	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Hexachlorobutadiene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Isopropylbenzene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
m and p-Xylene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Methylene chloride	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Methyl-t-butyl Ether (MTBE)	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Naphthalene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
N-butylbenzene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
N-propylbenzene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
o-Xylene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Sec-butylbenzene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Styrene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
t-Butyl alcohol (TBA)	ND	1.11	11.1	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Tert-amylmethylether (TAME)	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Tert-butylbenzene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Tetrachloroethene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Toluene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
trans-1,2-dichloroethene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
trans-1,3-dichloropropene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
trans-1,4-dichloro-2-butene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Trichloroethene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Trichlorofluoromethane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Vinyl Chloride	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Xylenes (Total)	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	

DRAFT

Matrix:	Solid	**Client:**	APEX	**Collector:**	Client
Sampled:	04/05/2018 15:56	**Site:**			
Sample #:	**401424-040**	**Client Sample #:**	OW2-1	**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Surrogate	*% Recovery*		*Limits*	*Notes*				
1,2-Dichloroethane-d4 (SUR)	*101*		*70-145*					
4-Bromofluorobenzene (SUR)	*109*		*70-145*					
Dibromofluoromethane (SUR)	*96*		*70-145*					
Toluene-d8 (SUR)	*100*		*70-145*					
Method: EPA 8270CM	Prep Method: EPA 3545					QCBatchID: QC1190108		
1-Methylnaphthalene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
2-Methylnaphthalene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Acenaphthene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Acenaphthylene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Anthracene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benz(a)anthracene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benzo(a)pyrene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benzo(b)fluoranthene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benzo(g,h,i)perylene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benzo(k)fluoranthene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Chrysene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Dibenz(a,h)anthracene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Fluoranthene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Fluorene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Indeno(1,2,3-cd)pyrene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Naphthalene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Phenanthrene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Pyrene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Surrogate	*% Recovery*		*Limits*	*Notes*				
2-Fluorobiphenyl (SUR)	*76*		*30-120*					
Nitrobenzene-d5 (SUR)	*91*		*27-125*					
p-Terphenyl (SUR)	*87*		*33-155*					

DRAFT

Matrix: Solid	**Client:** APEX			**Collector:** Client	
Sampled: 04/05/2018 15:09	**Site:**				
Sample #: **401424-046**	**Client Sample #:** OW3-2			**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 6010B *NELAC* Prep Method: EPA 3050B						QCBatchID: QC1189876		
Cadmium	**0.86**	1	0.5	mg/Kg	04/06/18	04/09/18	SBW	
Chromium	**7.74**	1	1	mg/Kg	04/06/18	04/09/18	SBW	
Lead	**1.82**	1	1	mg/Kg	04/06/18	04/09/18	SBW	
Nickel	**9.02**	1	1.5	mg/Kg	04/06/18	04/09/18	SBW	
Zinc	**18.8**	1	5	mg/Kg	04/06/18	04/09/18	SBW	
Method: EPA 8015B *NELAC* Prep Method: EPA 5030						QCBatchID: QC1189937		
TPH Gasoline	ND	1	3	mg/Kg		04/10/18	EW	
Surrogate	*% Recovery*		*Limits*	*Notes*				
4-Bromofluorobenzene (SUR)	*90*		*60-140*					
Method: EPA 8015M Prep Method: EPA 3580A						QCBatchID: QC1189903		
TPH Diesel	ND	1	10	mg/Kg	04/09/18	04/09/18	BB	
TPH Motor Oil	ND	1	20	mg/Kg	04/09/18	04/09/18	BB	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Triacontane (SUR)	*88*		*50-150*					
Method: EPA 8082 *NELAC* Prep Method: EPA 3545						QCBatchID: QC1189972		
PCB-1016	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1221	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1232	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1242	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1248	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1254	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1260	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1262	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
PCB-1268	ND	1	50	ug/Kg	04/10/18	04/13/18	MTS	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Decachlorobiphenyl DCB (SUR)	*78*		*50-150*					
Method: EPA 8260B *NELAC* Prep Method: EPA 5035A						QCBatchID: QC1190001		
1,1,1,2-Tetrachloroethane	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,1,1-Trichloroethane	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,1,2,2-Tetrachloroethane	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,1,2-Trichloroethane	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,1,2-Trichlorotrifluoroethane	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,1-Dichloroethane	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,1-Dichloroethene	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,1-Dichloropropene	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2,3-Trichlorobenzene	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2,3-Trichloropropane	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2,4-Trichlorobenzene	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2,4-Trimethylbenzene	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2-Dibromo-3-chloropropane	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2-Dibromoethane	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2-Dichlorobenzene	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2-Dichloroethane	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2-Dichloropropane	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,3,5-Trimethylbenzene	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,3-Dichlorobenzene	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,3-Dichloropropane	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,4-Dichlorobenzene	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
2,2-Dichloropropane	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
2-Butanone (MEK)	ND	1	100	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
2-Chloroethyl Vinyl Ether	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	

DRAFT

Matrix:	Solid	**Client:**	APEX	**Collector:**	Client
Sampled:	04/05/2018 15:09	**Site:**			
Sample #:	**401424-046**	**Client Sample #:**	OW3-2	**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
2-Chlorotoluene	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
4-Chlorotoluene	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
4-Isopropyltoluene	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
4-Methyl-2-pentanone (MIBK)	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Acetone	ND	1	100	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Allyl Chloride	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Benzene	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Bromobenzene	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Bromochloromethane	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Bromodichloromethane	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Bromoform	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Bromomethane	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Carbon Tetrachloride	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Chlorobenzene	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Chlorodibromomethane	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Chloroethane	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Chloroform	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Chloromethane	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
cis-1,2-Dichloroethene	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
cis-1,3-dichloropropene	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
cis-1,4-dichloro-2-butene	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Dibromomethane	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Dichlorodifluoromethane	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Di-isopropyl ether (DIPE)	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Ethylbenzene	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Ethyl-tertbutylether (ETBE)	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Hexachlorobutadiene	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Isopropylbenzene	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
m and p-Xylene	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Methylene chloride	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Methyl-t-butyl Ether (MTBE)	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Naphthalene	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
N-butylbenzene	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
N-propylbenzene	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
o-Xylene	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Sec-butylbenzene	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Styrene	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
t-Butyl alcohol (TBA)	ND	1	10	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Tert-amylmethylether (TAME)	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Tert-butylbenzene	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Tetrachloroethene	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Toluene	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
trans-1,2-dichloroethene	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
trans-1,3-dichloropropene	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
trans-1,4-dichloro-2-butene	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Trichloroethene	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Trichlorofluoromethane	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Vinyl Chloride	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Xylenes (Total)	ND	1	5	ug/Kg	04/10/18 00:00	04/10/18	ZZ	

DRAFT

Matrix:	Solid	**Client:**	APEX	**Collector:**	Client
Sampled:	04/05/2018 15:09	**Site:**			
Sample #:	**401424-046**	**Client Sample #:**	OW3-2	**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Surrogate	*% Recovery*		*Limits*	*Notes*				
1,2-Dichloroethane-d4 (SUR)	*102*		*70-145*					
4-Bromofluorobenzene (SUR)	*112*		*70-145*					
Dibromofluoromethane (SUR)	*98*		*70-145*					
Toluene-d8 (SUR)	*98*		*70-145*					
Method: EPA 8270CM	Prep Method: EPA 3545					QCBatchID: QC1190108		
1-Methylnaphthalene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
2-Methylnaphthalene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Acenaphthene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Acenaphthylene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Anthracene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benz(a)anthracene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benzo(a)pyrene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benzo(b)fluoranthene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benzo(g,h,i)perylene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benzo(k)fluoranthene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Chrysene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Dibenz(a,h)anthracene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Fluoranthene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Fluorene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Indeno(1,2,3-cd)pyrene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Naphthalene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Phenanthrene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Pyrene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Surrogate	*% Recovery*		*Limits*	*Notes*				
2-Fluorobiphenyl (SUR)	*67*		*30-120*					
Nitrobenzene-d5 (SUR)	*84*		*27-125*					
p-Terphenyl (SUR)	*85*		*33-155*					

DRAFT

Matrix:	Solid	**Client:**	APEX	**Collector:**	Client
Sampled:	04/05/2018 17:00	**Site:**			
Sample #:	**401424-049**	**Client Sample #:**	L16-2	**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 8015B *NELAC* Prep Method: EPA 5030						QCBatchID: QC1189937		
TPH Gasoline	ND	1	3	mg/Kg		04/10/18	EW	
Surrogate	*% Recovery*		*Limits*	*Notes*				
4-Bromofluorobenzene (SUR)	*90*		*60-140*					
Method: EPA 8015M Prep Method: EPA 3580A						QCBatchID: QC1189903		
TPH Diesel	ND	1	10	mg/Kg	04/09/18	04/09/18	BB	
TPH Motor Oil	ND	1	20	mg/Kg	04/09/18	04/09/18	BB	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Triacontane (SUR)	*89*		*50-150*					
Method: EPA 8082 *NELAC* Prep Method: EPA 3545						QCBatchID: QC1190094		
PCB-1016	ND	1	50	ug/Kg	04/12/18	04/13/18	MTS	
PCB-1221	ND	1	50	ug/Kg	04/12/18	04/13/18	MTS	
PCB-1232	ND	1	50	ug/Kg	04/12/18	04/13/18	MTS	
PCB-1242	ND	1	50	ug/Kg	04/12/18	04/13/18	MTS	
PCB-1248	ND	1	50	ug/Kg	04/12/18	04/13/18	MTS	
PCB-1254	ND	1	50	ug/Kg	04/12/18	04/13/18	MTS	
PCB-1260	ND	1	50	ug/Kg	04/12/18	04/13/18	MTS	
PCB-1262	ND	1	50	ug/Kg	04/12/18	04/13/18	MTS	
PCB-1268	ND	1	50	ug/Kg	04/12/18	04/13/18	MTS	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Decachlorobiphenyl DCB (SUR)	*122*		*50-150*					

DRAFT

Matrix: Solid	**Client:** APEX			**Collector:** Client	
Sampled: 04/05/2018 14:05	**Site:**				
Sample #: **401424-052**	**Client Sample #:** OW4-1			**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 6010B *NELAC* Prep Method: EPA 3050B						QCBatchID: QC1189876		
Cadmium	**0.74**	1	0.5	mg/Kg	04/06/18	04/09/18	SBW	
Chromium	**9.07**	1	1	mg/Kg	04/06/18	04/09/18	SBW	
Lead	**2.79**	1	1	mg/Kg	04/06/18	04/09/18	SBW	
Nickel	**8.88**	1	1.5	mg/Kg	04/06/18	04/09/18	SBW	
Zinc	**25.2**	1	5	mg/Kg	04/06/18	04/09/18	SBW	
Method: EPA 8015B *NELAC* Prep Method: EPA 5030						QCBatchID: QC1189937		
TPH Gasoline	ND	1	3	mg/Kg		04/10/18	EW	
Surrogate	*% Recovery*		*Limits*	*Notes*				
4-Bromofluorobenzene (SUR)	*90*		*60-140*					
Method: EPA 8015M Prep Method: EPA 3580A						QCBatchID: QC1189903		
TPH Diesel	ND	1	10	mg/Kg	04/09/18	04/09/18	BB	
TPH Motor Oil	ND	1	20	mg/Kg	04/09/18	04/09/18	BB	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Triacontane (SUR)	*80*		*50-150*					
Method: EPA 8082 *NELAC* Prep Method: EPA 3545						QCBatchID: QC1190094		
PCB-1016	ND	1	50	ug/Kg	04/12/18	04/13/18	MTS	
PCB-1221	ND	1	50	ug/Kg	04/12/18	04/13/18	MTS	
PCB-1232	ND	1	50	ug/Kg	04/12/18	04/13/18	MTS	
PCB-1242	ND	1	50	ug/Kg	04/12/18	04/13/18	MTS	
PCB-1248	ND	1	50	ug/Kg	04/12/18	04/13/18	MTS	
PCB-1254	ND	1	50	ug/Kg	04/12/18	04/13/18	MTS	
PCB-1260	ND	1	50	ug/Kg	04/12/18	04/13/18	MTS	
PCB-1262	ND	1	50	ug/Kg	04/12/18	04/13/18	MTS	
PCB-1268	ND	1	50	ug/Kg	04/12/18	04/13/18	MTS	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Decachlorobiphenyl DCB (SUR)	*122*		*50-150*					
Method: EPA 8260B *NELAC* Prep Method: EPA 5035A						QCBatchID: QC1190001		
1,1,1,2-Tetrachloroethane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,1,1-Trichloroethane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,1,2,2-Tetrachloroethane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,1,2-Trichloroethane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,1,2-Trichlorotrifluoroethane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,1-Dichloroethane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,1-Dichloroethene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,1-Dichloropropene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2,3-Trichlorobenzene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2,3-Trichloropropane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2,4-Trichlorobenzene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2,4-Trimethylbenzene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2-Dibromo-3-chloropropane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2-Dibromoethane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2-Dichlorobenzene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2-Dichloroethane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,2-Dichloropropane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,3,5-Trimethylbenzene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,3-Dichlorobenzene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,3-Dichloropropane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
1,4-Dichlorobenzene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
2,2-Dichloropropane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
2-Butanone (MEK)	ND	1.11	111	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
2-Chloroethyl Vinyl Ether	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	

DRAFT

Matrix:	Solid	**Client:**	APEX	**Collector:**	Client
Sampled:	04/05/2018 14:05	**Site:**			
Sample #:	**401424-052**	**Client Sample #:**	OW4-1	**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
2-Chlorotoluene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
4-Chlorotoluene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
4-Isopropyltoluene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
4-Methyl-2-pentanone (MIBK)	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Acetone	ND	1.11	111	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Allyl Chloride	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Benzene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Bromobenzene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Bromochloromethane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Bromodichloromethane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Bromoform	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Bromomethane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Carbon Tetrachloride	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Chlorobenzene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Chlorodibromomethane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Chloroethane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Chloroform	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Chloromethane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
cis-1,2-Dichloroethene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
cis-1,3-dichloropropene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
cis-1,4-dichloro-2-butene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Dibromomethane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Dichlorodifluoromethane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Di-isopropyl ether (DIPE)	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Ethylbenzene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Ethyl-tertbutylether (ETBE)	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Hexachlorobutadiene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Isopropylbenzene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
m and p-Xylene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Methylene chloride	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Methyl-t-butyl Ether (MTBE)	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Naphthalene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
N-butylbenzene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
N-propylbenzene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
o-Xylene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Sec-butylbenzene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Styrene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
t-Butyl alcohol (TBA)	ND	1.11	11.1	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Tert-amylmethylether (TAME)	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Tert-butylbenzene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Tetrachloroethene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Toluene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
trans-1,2-dichloroethene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
trans-1,3-dichloropropene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
trans-1,4-dichloro-2-butene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Trichloroethene	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Trichlorofluoromethane	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Vinyl Chloride	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	
Xylenes (Total)	ND	1.11	5.55	ug/Kg	04/10/18 00:00	04/10/18	ZZ	

DRAFT

Matrix:	Solid	**Client:**	APEX	**Collector:**	Client
Sampled:	04/05/2018 14:05	**Site:**			
Sample #:	**401424-052**	**Client Sample #:**	OW4-1	**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Surrogate	*% Recovery*		*Limits*	*Notes*				
1,2-Dichloroethane-d4 (SUR)	*101*		*70-145*					
4-Bromofluorobenzene (SUR)	*108*		*70-145*					
Dibromofluoromethane (SUR)	*97*		*70-145*					
Toluene-d8 (SUR)	*100*		*70-145*					
Method: EPA 8270CM	Prep Method: EPA 3545					QCBatchID: QC1190108		
1-Methylnaphthalene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
2-Methylnaphthalene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Acenaphthene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Acenaphthylene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Anthracene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benz(a)anthracene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benzo(a)pyrene	**10**	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benzo(b)fluoranthene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benzo(g,h,i)perylene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Benzo(k)fluoranthene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Chrysene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Dibenz(a,h)anthracene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Fluoranthene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Fluorene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Indeno(1,2,3-cd)pyrene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Naphthalene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Phenanthrene	ND	1	10	ug/Kg	04/13/18	04/13/18	DP	
Pyrene	**11**	1	10	ug/Kg	04/13/18	04/13/18	DP	
Surrogate	*% Recovery*		*Limits*	*Notes*				
2-Fluorobiphenyl (SUR)	*71*		*30-120*					
Nitrobenzene-d5 (SUR)	*86*		*27-125*					
p-Terphenyl (SUR)	*85*		*33-155*					

DRAFT

QCBatchID: QC1189875	Analyst: dswafford	Method: EPA 6010B
Matrix: Solid	Analyzed: 04/08/2018	Instrument: AAICP (group)

Blank Summary

Analyte	Blank Result	Units		RDL	Notes
QC1189875MB1					
Arsenic	ND	mg/Kg		1	
Cadmium	ND	mg/Kg		0.5	
Chromium	ND	mg/Kg		1	
Lead	ND	mg/Kg		1	
Nickel	ND	mg/Kg		1.5	
Zinc	ND	mg/Kg		5	

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount LCS	Spike Amount LCSD	Spike Result LCS	Spike Result LCSD	Units	Recoveries LCS	Recoveries LCSD	RPD	Limits %Rec	Limits RPD	Notes
QC1189875LCS1											
Arsenic	100		93.2		mg/Kg	93			80-120		
Cadmium	100		102		mg/Kg	102			80-120		
Chromium	100		98.1		mg/Kg	98			80-120		
Lead	100		98.5		mg/Kg	99			80-120		
Nickel	100		102		mg/Kg	102			80-120		
Zinc	100		100		mg/Kg	100			80-120		

Matrix Spike/Matrix Spike Duplicate Summary

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1189875MS1, QC1189875MSD1												**Source: 401416-003**
Arsenic	4.92	100	100	96.3	97.9	mg/Kg	91	93	1.6	75-125	20	
Cadmium	0.44	100	100	91.8	96.1	mg/Kg	91	96	4.6	75-125	20	
Chromium	17.7	100	100	110	114	mg/Kg	92	96	3.6	75-125	20	
Lead	8.08	100	100	96.5	98.3	mg/Kg	88	90	1.8	75-125	20	
Nickel	10.6	100	100	103	106	mg/Kg	92	95	2.9	75-125	20	
Zinc	70.7	100	100	165	174	mg/Kg	94	103	5.3	75-125	20	

DRAFT

QCBatchID: QC1189876 **Analyst:** dswafford **Method:** EPA 6010B

Matrix: Solid **Analyzed:** 04/08/2018 **Instrument:** AAICP (group)

Blank Summary

Analyte	Blank Result	Units		RDL	Notes
QC1189876MB1					
Antimony	ND	mg/Kg		3	
Arsenic	ND	mg/Kg		1	
Barium	ND	mg/Kg		1	
Beryllium	ND	mg/Kg		0.5	
Cadmium	ND	mg/Kg		0.5	
Chromium	ND	mg/Kg		1	
Cobalt	ND	mg/Kg		0.5	
Copper	ND	mg/Kg		1	
Lead	ND	mg/Kg		1	
Molybdenum	ND	mg/Kg		1	
Nickel	ND	mg/Kg		1.5	
Selenium	ND	mg/Kg		3	
Silver	ND	mg/Kg		0.5	
Thallium	ND	mg/Kg		3	
Vanadium	ND	mg/Kg		0.5	
Zinc	ND	mg/Kg		5	

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount LCS	Spike Amount LCSD	Spike Result LCS	Spike Result LCSD	Units	Recoveries LCS	Recoveries LCSD	RPD	Limits %Rec	Limits RPD	Notes
QC1189876LCS1											
Antimony	100		100		mg/Kg	100			80-120		
Arsenic	100		95.1		mg/Kg	95			80-120		
Barium	100		102		mg/Kg	102			80-120		
Beryllium	100		111		mg/Kg	111			80-120		
Cadmium	100		104		mg/Kg	104			80-120		
Chromium	100		100		mg/Kg	100			80-120		
Cobalt	100		102		mg/Kg	102			80-120		
Copper	100		99.6		mg/Kg	100			80-120		
Lead	100		103		mg/Kg	103			80-120		
Molybdenum	100		95.2		mg/Kg	95			80-120		
Nickel	100		104		mg/Kg	104			80-120		
Selenium	100		97.7		mg/Kg	98			80-120		
Silver	100		94.4		mg/Kg	94			80-120		
Thallium	100		98.0		mg/Kg	98			80-120		
Vanadium	100		101		mg/Kg	101			80-120		
Zinc	100		102		mg/Kg	102			80-120		

Matrix Spike/Matrix Spike Duplicate Summary

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1189876MS1, QC1189876MSD1												**Source: 401424-034**
Antimony	ND	100	100	68.9	63.4	mg/Kg	69	63	8.3	75-125	20	M
Arsenic	3.66	100	100	98.7	89.5	mg/Kg	95	86	9.8	75-125	20	
Barium	42.0	100	100	139	125	mg/Kg	97	83	10.6	75-125	20	
Beryllium	ND	100	100	98.8	98.6	mg/Kg	99	99	0.2	75-125	20	
Cadmium	0.63	100	100	101	91.6	mg/Kg	100	91	9.8	75-125	20	
Chromium	7.02	100	100	104	94.5	mg/Kg	97	87	9.6	75-125	20	
Cobalt	2.88	100	100	100	91.4	mg/Kg	97	89	9.0	75-125	20	
Copper	3.85	100	100	101	91.8	mg/Kg	97	88	9.5	75-125	20	
Lead	1.81	100	100	96.0	86.6	mg/Kg	94	85	10.3	75-125	20	

DRAFT

QCBatchID: QC1189876	**Analyst:** dswafford	**Method:** EPA 6010B			
Matrix: Solid	**Analyzed:** 04/08/2018	**Instrument:** AAICP (group)			

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1189876MS1, QC1189876MSD1												**Source: 401424-034**
Molybdenum	1.63	100	100	92.5	84.1	mg/Kg	91	82	9.5	75-125	20	
Nickel	6.80	100	100	106	96.4	mg/Kg	99	90	9.5	75-125	20	
Selenium	ND	100	100	86.1	78.6	mg/Kg	86	79	9.1	75-125	20	
Silver	ND	100	100	91.4	82.8	mg/Kg	91	83	9.9	75-125	20	
Thallium	ND	100	100	93.5	84.3	mg/Kg	94	84	10.3	75-125	20	
Vanadium	15.9	100	100	118	106	mg/Kg	102	90	10.7	75-125	20	
Zinc	14.0	100	100	113	102	mg/Kg	99	88	10.2	75-125	20	

DRAFT

QCBatchID: QC1189883	**Analyst:** Jarriaga	**Method:** EPA 8015M	
Matrix: Solid	**Analyzed:** 04/09/2018	**Instrument:** SVOA-GC (group)	

Blank Summary

Analyte	Blank Result	Units		RDL	Notes	
QC1189883MB1						
TPH (C10 to C28)	ND	mg/Kg		10		
TPH (C13 to C22)	ND	mg/Kg		10		
TPH (C23 to C40)	ND	mg/Kg		20		
TPH Diesel	ND	mg/Kg		10		
TPH Motor Oil	ND	mg/Kg		20		

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount LCS	Spike Amount LCSD	Spike Result LCS	Spike Result LCSD	Units	Recoveries LCS	Recoveries LCSD	RPD	Limits %Rec	Limits RPD	Notes
QC1189883LCS1											
TPH (C10 to C28)	250		240		mg/Kg	96			70-130		

Matrix Spike/Matrix Spike Duplicate Summary

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1189883MS1, QC1189883MSD1												**Source: 401382-001**
TPH (C10 to C28)	ND	250	250	310	310	mg/Kg	124	124	0.0	70-130	20	

DRAFT

QCBatchID: QC1189903	**Analyst:** Jarriaga	**Method:** EPA 8015M	
Matrix: Solid	**Analyzed:** 04/09/2018	**Instrument:** SVOA-GC (group)	

Blank Summary

Analyte	Blank Result	Units		RDL	Notes	
QC1189903MB1						
TPH (C10 to C28)	ND	mg/Kg		10		
TPH (C13 to C22)	ND	mg/Kg		10		
TPH (C23 to C40)	ND	mg/Kg		20		
TPH (C23 to C44)	ND	mg/Kg		20		
TPH (C6 to C12)	ND	mg/Kg		10		

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount LCS	Spike Amount LCSD	Spike Result LCS	Spike Result LCSD	Units	Recoveries LCS	Recoveries LCSD	RPD	Limits %Rec	Limits RPD	Notes
QC1189903LCS1											
TPH (C10 to C28)	250		230		mg/Kg	92			70-130		

DRAFT

QCBatchID: QC1189937	Analyst: sandyw	Method: EPA 8015B
Matrix: Solid	Analyzed: 04/10/2018	Instrument: VOA-GC (group)

Blank Summary

Analyte	Blank Result	Units		RDL	Notes	
QC1189937MB1						
TPH (C6 to C12)	ND	mg/Kg		3		

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount		Spike Result		Units	Recoveries		RPD	Limits		Notes
	LCS	LCSD	LCS	LCSD		LCS	LCSD		%Rec	RPD	
QC1189937LCS1											
TPH (C6 to C12)	5		5.86		mg/Kg	117			70-130		

Matrix Spike/Matrix Spike Duplicate Summary

Analyte	Sample Amount	Spike Amount		Spike Result		Units	Recoveries		RPD	Limits		Notes
		MS	MSD	MS	MSD		MS	MSD		%Rec	RPD	
QC1189937MS1, QC1189937MSD1												**Source: 401424-002**
TPH (C6 to C12)	ND	5	5	4.47	4.25	mg/Kg	89	85	5.0	70-130	20	

DRAFT

QCBatchID: QC1189962	Analyst: Jarriaga	Method: EPA 8015M
Matrix: Solid	Analyzed: 04/10/2018	Instrument: SVOA-GC (group)

Blank Summary

Analyte	Blank Result	Units		RDL	Notes	
QC1189962MB1						
TPH (C10 to C28)	ND	mg/Kg		10		
TPH (C13 to C22)	ND	mg/Kg		10		
TPH (C23 to C40)	ND	mg/Kg		20		
TPH (C28 to C40)	ND	mg/Kg		20		
TPH (C28 to C44)	ND	mg/Kg		20		
TPH (C8 to C10)	ND	mg/Kg		10		
TPH Diesel	ND	mg/Kg		10		
TPH Motor Oil	ND	mg/Kg		20		

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount LCS	Spike Amount LCSD	Spike Result LCS	Spike Result LCSD	Units	Recoveries LCS	Recoveries LCSD	RPD	Limits %Rec	Limits RPD	Notes
QC1189962LCS1											
TPH (C10 to C28)	250		220		mg/Kg	88			70-130		

Matrix Spike/Matrix Spike Duplicate Summary

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1189962MS1, QC1189962MSD1												**Source: 401318-001**
TPH (C10 to C28)	ND	250	250	260	260	mg/Kg	104		0.0	70-130	20	

DRAFT

QCBatchID: QC1189972	Analyst: Abanh	Method: EPA 8082
Matrix: Solid	Analyzed: 04/10/2018	Instrument: SVOA-GC (group)

Blank Summary

Analyte	Blank Result	Units		RDL	Notes
QC1189972MB1					
PCB-1016	ND	ug/Kg		50	
PCB-1221	ND	ug/Kg		50	
PCB-1232	ND	ug/Kg		50	
PCB-1242	ND	ug/Kg		50	
PCB-1248	ND	ug/Kg		50	
PCB-1254	ND	ug/Kg		50	
PCB-1260	ND	ug/Kg		50	
PCB-1262	ND	ug/Kg		50	
PCB-1268	ND	ug/Kg		50	

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount		Spike Result		Units	Recoveries		RPD	Limits		Notes
	LCS	LCSD	LCS	LCSD		LCS	LCSD		%Rec	RPD	
QC1189972LCS1											
PCB-1016	500		400		ug/Kg	80			70-130		
PCB-1260	500		500		ug/Kg	100			70-130		

Matrix Spike/Matrix Spike Duplicate Summary

Analyte	Sample Amount	Spike Amount		Spike Result		Units	Recoveries		RPD	Limits		Notes
		MS	MSD	MS	MSD		MS	MSD		%Rec	RPD	
QC1189972MS1, QC1189972MSD1												**Source: 401382-001**
PCB-1016	ND	500	500	390	270	ug/Kg	78	54	36.4	70-130	20	
PCB-1260	ND	500	500	380	310	ug/Kg	76	62	20.3	70-130	20	

DRAFT

QCBatchID: QC1190001	Analyst: bbuilt	Method: EPA 8260B
Matrix: Solid	Analyzed: 04/10/2018	Instrument: VOA-MS (group)

Blank Summary

Analyte	Blank Result	Units		RDL	Notes
QC1190001MB1					
1,1,1,2-Tetrachloroethane	ND	ug/Kg		5	
1,1,1-Trichloroethane	ND	ug/Kg		5	
1,1,2,2-Tetrachloroethane	ND	ug/Kg		5	
1,1,2-Trichloroethane	ND	ug/Kg		5	
1,1,2-Trichlorotrifluoroethane	ND	ug/Kg		5	
1,1-Dichloroethane	ND	ug/Kg		5	
1,1-Dichloroethene	ND	ug/Kg		5	
1,1-Dichloropropene	ND	ug/Kg		5	
1,2,3-Trichlorobenzene	ND	ug/Kg		5	
1,2,3-Trichloropropane	ND	ug/Kg		5	
1,2,4-Trichlorobenzene	ND	ug/Kg		5	
1,2,4-Trimethylbenzene	ND	ug/Kg		5	
1,2-Dibromo-3-chloropropane	ND	ug/Kg		5	
1,2-Dibromoethane	ND	ug/Kg		5	
1,2-Dichlorobenzene	ND	ug/Kg		5	
1,2-Dichloroethane	ND	ug/Kg		5	
1,2-Dichloropropane	ND	ug/Kg		5	
1,3,5-Trimethylbenzene	ND	ug/Kg		5	
1,3-Dichlorobenzene	ND	ug/Kg		5	
1,3-Dichloropropane	ND	ug/Kg		5	
1,4-Dichlorobenzene	ND	ug/Kg		5	
2,2-Dichloropropane	ND	ug/Kg		5	
2-Butanone (MEK)	ND	ug/Kg		100	
2-Chloroethyl Vinyl Ether	ND	ug/Kg		5	
2-Chlorotoluene	ND	ug/Kg		5	
4-Chlorotoluene	ND	ug/Kg		5	
4-Isopropyltoluene	ND	ug/Kg		5	
4-Methyl-2-pentanone (MIBK)	ND	ug/Kg		5	
Acetone	ND	ug/Kg		100	
Allyl Chloride	ND	ug/Kg		5	
Benzene	ND	ug/Kg		5	
Bromobenzene	ND	ug/Kg		5	
Bromochloromethane	ND	ug/Kg		5	
Bromodichloromethane	ND	ug/Kg		5	
Bromoform	ND	ug/Kg		5	
Bromomethane	ND	ug/Kg		5	
Carbon Tetrachloride	ND	ug/Kg		5	
Chlorobenzene	ND	ug/Kg		5	
Chlorodibromomethane	ND	ug/Kg		5	
Chloroethane	ND	ug/Kg		5	
Chloroform	ND	ug/Kg		5	
Chloromethane	ND	ug/Kg		5	
cis-1,2-Dichloroethene	ND	ug/Kg		5	
cis-1,3-dichloropropene	ND	ug/Kg		5	
cis-1,4-dichloro-2-butene	ND	ug/Kg		5	
Dibromomethane	ND	ug/Kg		5	
Dichlorodifluoromethane	ND	ug/Kg		5	
Di-isopropyl ether (DIPE)	ND	ug/Kg		5	
Ethylbenzene	ND	ug/Kg		5	
Ethyl-tertbutylether (ETBE)	ND	ug/Kg		5	
Hexachlorobutadiene	ND	ug/Kg		5	

DRAFT

QCBatchID: QC1190001	Analyst: bbuilt	Method: EPA 8260B
Matrix: Solid	Analyzed: 04/10/2018	Instrument: VOA-MS (group)

Analyte	Blank Result	Units		RDL	Notes
QC1190001MB1					
Isopropylbenzene	ND	ug/Kg		5	
m and p-Xylene	ND	ug/Kg		5	
Methylene chloride	ND	ug/Kg		5	
Methyl-t-butyl Ether (MTBE)	ND	ug/Kg		5	
Naphthalene	ND	ug/Kg		5	
N-butylbenzene	ND	ug/Kg		5	
N-propylbenzene	ND	ug/Kg		5	
o-Xylene	ND	ug/Kg		5	
Sec-butylbenzene	ND	ug/Kg		5	
Styrene	ND	ug/Kg		5	
t-Butyl alcohol (TBA)	ND	ug/Kg		10	
Tert-amylmethylether (TAME)	ND	ug/Kg		5	
Tert-butylbenzene	ND	ug/Kg		5	
Tetrachloroethene	ND	ug/Kg		5	
Toluene	ND	ug/Kg		5	
trans-1,2-dichloroethene	ND	ug/Kg		5	
trans-1,3-dichloropropene	ND	ug/Kg		5	
trans-1,4-dichloro-2-butene	ND	ug/Kg		5	
Trichloroethene	ND	ug/Kg		5	
Trichlorofluoromethane	ND	ug/Kg		5	
Vinyl Chloride	ND	ug/Kg		5	
Xylenes (Total)	ND	ug/Kg		5	

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount LCS	Spike Amount LCSD	Spike Result LCS	Spike Result LCSD	Units	Recoveries LCS	Recoveries LCSD	RPD	Limits %Rec	Limits RPD	Notes
QC1190001LCS1, QC1190001LCSD1											
1,1-Dichloroethene	50	50	49	50	ug/Kg	98	100	2	59-172	22	
Benzene	50	50	48	50	ug/Kg	96	100	4	62-137	24	
Chlorobenzene	50	50	47	49	ug/Kg	94	98	4	60-133	24	
Methyl-t-butyl Ether (MTBE)	50	50	45	47	ug/Kg	90	94	4	62-137	21	
Toluene	50	50	47	48	ug/Kg	94	96	2	59-139	21	
Trichloroethene	50	50	46	49	ug/Kg	92	98	6	66-142	21	

DRAFT

QCBatchID:	**QC1190094**	**Analyst:**	ssabir	**Method:**	EPA 8082
Matrix:	Solid	**Analyzed:**	04/12/2018	**Instrument:**	SVOA-GC (group)

Blank Summary

Analyte	Blank Result	Units		RDL	Notes
QC1190094MB1					
PCB-1016	ND	ug/Kg		50	
PCB-1221	ND	ug/Kg		50	
PCB-1232	ND	ug/Kg		50	
PCB-1242	ND	ug/Kg		50	
PCB-1248	ND	ug/Kg		50	
PCB-1254	ND	ug/Kg		50	
PCB-1260	ND	ug/Kg		50	
PCB-1262	ND	ug/Kg		50	
PCB-1268	ND	ug/Kg		50	

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount LCS	Spike Amount LCSD	Spike Result LCS	Spike Result LCSD	Units	Recoveries LCS	Recoveries LCSD	RPD	Limits %Rec	Limits RPD	Notes
QC1190094LCS1											
PCB-1016	500		480		ug/Kg	96			70-130		
PCB-1260	500		570		ug/Kg	114			70-130		

Matrix Spike/Matrix Spike Duplicate Summary

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1190094MS1, QC1190094MSD1												**Source: 401275-003**
PCB-1016	ND	500	500	410	510	ug/Kg	82	102	21.7	70-130	20	
PCB-1260	ND	500	500	1500	1300	ug/Kg	300	260	14.3	70-130	20	

Duplicate Summary

Analyte	Sample Amount	Duplicate Amount	Units	RPD	Limits RPD	Notes
QC1190094DUP1						**Source: 401275-003**
PCB-1016	ND	ND	ug/Kg		20	
PCB-1221	ND	ND	ug/Kg		20	
PCB-1232	ND	ND	ug/Kg		20	
PCB-1242	ND	ND	ug/Kg		20	
PCB-1248	ND	ND	ug/Kg		20	
PCB-1254	ND	ND	ug/Kg		20	
PCB-1260	ND	ND	ug/Kg		20	
PCB-1262	ND	ND	ug/Kg		20	
PCB-1268	ND	ND	ug/Kg		20	

DRAFT

QCBatchID: QC1190108	**Analyst:** ssabir	**Method:** EPA 8270CM	
Matrix: Solid	**Analyzed:** 04/13/2018	**Instrument:** SVOA-MS (group)	

Blank Summary

Analyte	Blank Result	Units		RDL	Notes
QC1190108MB1					
1-Methylnaphthalene	ND	ug/Kg		10	
2-Methylnaphthalene	ND	ug/Kg		10	
Acenaphthene	ND	ug/Kg		10	
Acenaphthylene	ND	ug/Kg		10	
Anthracene	ND	ug/Kg		10	
Benz(a)anthracene	ND	ug/Kg		10	
Benzo(a)pyrene	ND	ug/Kg		10	
Benzo(b)fluoranthene	ND	ug/Kg		10	
Benzo(g,h,i)perylene	ND	ug/Kg		10	
Benzo(k)fluoranthene	ND	ug/Kg		10	
Chrysene	ND	ug/Kg		10	
Dibenz(a,h)anthracene	ND	ug/Kg		10	
Fluoranthene	ND	ug/Kg		10	
Fluorene	ND	ug/Kg		10	
Indeno(1,2,3-cd)pyrene	ND	ug/Kg		10	
Naphthalene	ND	ug/Kg		10	
Phenanthrene	ND	ug/Kg		10	
Pyrene	ND	ug/Kg		10	

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount LCS	Spike Amount LCSD	Spike Result LCS	Spike Result LCSD	Units	Recoveries LCS	Recoveries LCSD	RPD	Limits %Rec	Limits RPD	Notes
QC1190108LCS1											
1-Methylnaphthalene	50		36		ug/Kg	72			70-130		
2-Methylnaphthalene	50		45		ug/Kg	90			70-130		
Acenaphthene	50		42		ug/Kg	84			70-130		
Acenaphthylene	50		44		ug/Kg	88			70-130		
Anthracene	50		45		ug/Kg	90			70-130		
Benz(a)anthracene	50		50		ug/Kg	100			70-130		
Benzo(a)pyrene	50		50		ug/Kg	100			70-130		
Benzo(b)fluoranthene	50		50		ug/Kg	100			70-130		
Benzo(g,h,i)perylene	50		42		ug/Kg	84			70-130		
Benzo(k)fluoranthene	50		49		ug/Kg	98			70-130		
Chrysene	50		44		ug/Kg	88			70-130		
Dibenz(a,h)anthracene	50		47		ug/Kg	94			70-130		
Fluoranthene	50		49		ug/Kg	98			70-130		
Fluorene	50		44		ug/Kg	88			70-130		
Indeno(1,2,3-cd)pyrene	50		48		ug/Kg	96			70-130		
Naphthalene	50		42		ug/Kg	84			70-130		
Phenanthrene	50		46		ug/Kg	92			70-130		
Pyrene	50		48		ug/Kg	96			70-130		

Matrix Spike/Matrix Spike Duplicate Summary

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1190108MS1, QC1190108MSD1												**Source: 401382-001**
1-Methylnaphthalene	ND	50	50	31	36	ug/Kg	62	72	14.9	70-130	35	M
2-Methylnaphthalene	ND	50	50	38	45	ug/Kg	76	90	16.9	70-130	35	
Acenaphthene	ND	50	50	37	43	ug/Kg	74	86	15.0	70-130	35	
Acenaphthylene	ND	50	50	37	44	ug/Kg	74	88	17.3	70-130	35	
Anthracene	ND	50	50	39	45	ug/Kg	78	90	14.3	70-130	35	

DRAFT

QCBatchID: QC1190108 **Analyst:** ssabir **Method:** EPA 8270CM

Matrix: Solid **Analyzed:** 04/13/2018 **Instrument:** SVOA-MS (group)

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1190108MS1, QC1190108MSD1												**Source: 401382-001**
Benz(a)anthracene	ND	50	50	37	50	ug/Kg	74	100	29.9	70-130	35	
Benzo(a)pyrene	ND	50	50	43	51	ug/Kg	86	102	17.0	70-130	35	
Benzo(b)fluoranthene	ND	50	50	42	52	ug/Kg	84	104	21.3	70-130	35	
Benzo(g,h,i)perylene	ND	50	50	34	42	ug/Kg	68	84	21.1	70-130	35	M
Benzo(k)fluoranthene	ND	50	50	42	53	ug/Kg	84	106	23.2	70-130	35	
Chrysene	ND	50	50	36	45	ug/Kg	72	90	22.2	70-130	35	
Dibenz(a,h)anthracene	ND	50	50	38	44	ug/Kg	76	88	14.6	70-130	35	
Fluoranthene	ND	50	50	40	48	ug/Kg	80	96	18.2	70-130	35	
Fluorene	ND	50	50	38	45	ug/Kg	76	90	16.9	70-130	35	
Indeno(1,2,3-cd)pyrene	ND	50	50	39	48	ug/Kg	78	96	20.7	70-130	35	
Naphthalene	ND	50	50	36	42	ug/Kg	72	84	15.4	70-130	35	
Phenanthrene	ND	50	50	38	45	ug/Kg	76	90	16.9	70-130	35	
Pyrene	ND	50	50	39	47	ug/Kg	78	94	18.6	70-130	35	

DRAFT

Data Qualifiers and Definitions

Qualifiers

A	See Report Comments.
B	Analyte was present in an associated method blank.
B1	Analyte was present in a sample and associated method blank greater than MDL but less than RDL.
BQ1	No valid test replicates. Sample Toxicity is possible. Best result was reported.
BQ2	No valid test replicates.
BQ3	No valid test replicates. Final DO is less than 1.0 mg/L. Result may be greater.
C	Possible laboratory contamination.
D	RPD was not within control limits. The sample data was reported without further clarification.
D1	Lesser amount of sample was used due to insufficient amount of sample supplied.
D2	Reporting limit is elevated due to sample matrix. Target analyte was not detected above the elevated reporting limit.
D3	Insufficient sample was supplied for TCLP. Client was notified. TCLP was performed per the Client's instructions.
DW	Sample result is calculated on a dry weigh basis.
E	Concentration is estimated because it exceeds the quantification limits of the method.
I	The sample was read outside of the method required incubation period.
J	Reported value is estimated
L	The laboratory control sample (LCS) or laboratory control sample duplicate (LCSD) was out of control limits. Associated sample data was reported with qualifier.
M	The matrix spike (MS) or matrix spike duplicate (MSD) was not within control limits due to matrix interference. The associated LCS and/or LCSD was within control limits and the sample data was reported without further clarification.
M1	The matrix spike (MS) or matrix spike duplicate (MSD) is not within control limits due to matrix interference.
M2	The matrix spike (MS) or matrix spike duplicate (MSD) was not within control limits. The associated LCS and/or LCSD was not within control limits. Sample result is estimated.
N1	Sample chromatography does not match the specified TPH standard pattern.
NC	The analyte concentration in the sample exceeded the spike level by a factor of four or greater, spike recovery and limits do not apply.
P	Sample was received without proper preservation according to EPA guidelines.
P1	Temperature of sample storage refrigerator was out of acceptance limits.
P2	The sample was preserved within 24 hours of collection in accordance with EPA 218.6.
P3	Per Client request, sample was composited for volatile analysis. Sample compositing for volatile analysis is not recommended due to potential loss of target analytes. Results may be biased low.
Q1	Analyte Calibration Verification exceeds criteria. The result is estimated.
Q2	Analyte calibration was not verified and the result was estimated.
Q3	Analyte initial calibration was not available or exceeds criteria. The result was estimated.
S	The surrogate recovery was out of control limits due to matrix interference. The associated method blank surrogate recovery was within control limits and the sample data was reported without further clarification.
S1	The associated surrogate recovery was out of control limits; result is estimated.
S2	The surrogate was diluted out due to the presence of high concentrations of target and/or non-target compounds. Surrogate recoveries in the associated batch QC met recovery criteria.
S3	Internal Standard did not meet recovery limits. Analyte concentration is estimated.
T	Sample was extracted/analyzed past the holding time.
T1	Reanalysis was reported past hold time due to failing replicates in the original analysis (BOD only).
T2	Sample was analyzed ASAP but received and analyzed past the 15 minute holding time.
T3	Sample received and analyzed out of hold time per client's request.
T4	Sample was analyzed out of hold time per client's request.
T5	Reanalysis was reported past hold time. The original analysis was within hold time, but not reportable.
T6	Hold time is indeterminable due to unspecified sampling time.
T7	Sample was analyzed past hold time due to insufficient time remaining at time of receipt.

Definitions

DF	Dilution Factor
MDL	Method Detection Limit. Result is reported ND when it is less than or equal to MDL.
ND	Analyte was not detected or was less than the detection limit.
NR	Not Reported. See Report Comments.
RDL	Reporting Detection Limit
TIC	Tentatively Identified Compounds

DRAFT

ENTHALPY ANALYTICAL	Chain of Custody Record	Turn Around Time (Rush by advanced notice only)
931 W. Barkley Ave., Orange, CA 92868 Phone: (714) 771-6900 Fax: (714) 538-1209 Billing: Enthalpy Analytical 1 Park Plaza, Suite 1000 Irvine, CA 92614	Lab No: 401424 Page: 1 of 6 **Matrix:** A = Air DW = Drinking Water FL = Food Liquid FS = Food Solid L = Liquid PP = Pure Product S = Solid SeaW = Sea Water SW = Swab W = Water WP = Wipe O = Other	Standard: ☐ 4 Day: ☐ 3 Day: ☐ 2 Day: ☐ 1 Day: ☐ Same Day: ☐ **Preservatives:** 1 = $Na_2S_2O_3$ 2 = HCl 3 = HNO_3 4 = H_2SO_4 5 = NaOH 6 = Other

CUSTOMER INFORMATION		PROJECT INFORMATION	
Company:	Apex Companies	Name:	Sears Brea Mall
Report To:	Paul Garcia	Number:	
Email:	paul.garcia@apexcos.com	P.O. #:	3616-A1000-003
Address:	10675 Sorrento Valley Road STE 203	Address:	100 Brea Mall
	San Diego, CA 92121		Brea, CA 92821
Phone:	858-558-1120	Global ID:	
Fax:	858-558-1121	Sampled By:	Tyler Steimel

	Sample ID	Sampling Date	Sampling Time	Matrix	Container No. / Size	Pres.	TPH Extended Range (8015B)	VOCs (8260B)	PCBs (8082)	PAHs (8270 SIM)	Luft-5 Metals (6010B)						Test Instructions / Comments
1	OT1-1	4/4/18	1615	S	4+802, 3,40mL	meoh											Hold
2	OT1-4	4/4/18	1620	"	"	"	X	X	X	X	X						
3	OT1-9	4/4/18	1642	"	"	"											Hold
4	OT1-12	4/4/18	1645	"	"	"											Hold
5	OT1-16	4/4/18	1650	"	"	"											Hold
6	OT1-6	4/5/18	817	"	"	"											Hold
7	L1-1	4/5/18	1015	"	4oz+802	N/A											Hold
8	L1-2	"	1021	"	"	"											Hold
9	L1-4	"	1025	"	"	"	X		X								
10	L1-7	"	1038	"	"	"											Hold

	Signature	Print Name	Company / Title	Date / Time
[1] Relinquished By:		Tylor Steimel	Apex	4/5/18 1850
[1] Received By:		6 Kim	EA	4/5/18 ~~1850~~ 1950
[2] Relinquished By:				
[2] Received By:				
[3] Relinquished By:				
[3] Received By:				

4.8/2.8 4.2/1.9

ENTHALPY ANALYTICAL		Chain of Custody Record		Turn Around Time (Rush by advanced notice only)			
931 W. Barkley Ave., Orange, CA 92868	ENTHALPY analytical, inc.	Lab No:		Standard:	4 Day:	3 Day:	
Phone: (714) 771-6900 Fax: (714) 538-1209		Page: 2 of 6		2 Day:	1 Day:	Same Day:	
Billing: Enthalpy Analytical		Matrix: A = Air DW = Drinking Water FL = Food Liquid FS = Food Solid L = Liquid PP = Pure Product S = Solid SeaW = Sea Water SW = Swab W = Water WP = Wipe O = Other		Preservatives: 1 = $Na_2S_2O_3$ 2 = HCl 3 = HNO_3 4 = H_2SO_4 5 = NaOH 6 = Other			
1 Park Plaza, Suite 1000							
Irvine, CA 92614							

CUSTOMER INFORMATION		PROJECT INFORMATION	
Company:	Apex Companies	Name:	Sears Brea Mall
Report To:	Paul Garcia	Number:	
Email:	paul.garcia@apexcos.com	P.O. #:	3616-A1000-003
Address:	10675 Sorrento Valley Road STE 203	Address:	100 Brea Mall
	San Diego, CA 92121		Brea, CA 92821
Phone:	858-558-1120	Global ID:	
Fax:	858-558-1121	Sampled By:	Tyler Steimel

	Sample ID	Sampling Date	Sampling Time	Matrix	Container No. / Size	Pres.	TPH Extended Range (8015B)	VOCs (8260B)	PCBs (8082)	PAHs (8270 SIM)	Luft-5 Metals (6010B)	Test Instructions / Comments
1	L1-12	4/5/18	1041	S	3, 4 oz	N/A						Hold
2	L2-1	"	1215	"	8+4 oz	N/A	~~X~~		~~X~~			Hold
3	L2-3	"	1220	"	8+4 oz	N/A	X		X			
4	L2-7	"	1224	"	8+4 oz	N/A						Hold
5	L2-12	"	1230	"	8+4 oz	N/A						Hold
6	L3-2	"	1150	"	"	N/A	X		X			
7	L3-8	"	1158	"	"	"						Hold
8	L3-12	"	1202	"	"	"						Hold
9	L3-3	"	1155	"	"	"						Hold
10	L4-2	"	1243	"			X		X			

	Signature	Print Name	Company / Title	Date / Time
[1] Relinquished By:		Tyler Steimel	Apex	4/5/18 1950
[1] Received By:		G Kim	EA	4/5/18 1950
[2] Relinquished By:				
[2] Received By:				
[3] Relinquished By:				
[3] Received By:				

ENTHALPY ANALYTICAL		Chain of Custody Record		Turn Around Time (Rush by advanced notice only)			
931 W. Barkley Ave., Orange, CA 92868	ENTHALPY analytical, inc.	Lab No:		Standard:	4 Day:	3 Day:	
Phone: (714) 771-6900 Fax: (714) 538-1209		Page: 3 of 6		2 Day:	1 Day:	Same Day:	
Billing: Enthalpy Analytical		Matrix: A = Air DW = Drinking Water FL = Food Liquid FS = Food Solid L = Liquid PP = Pure Product S = Solid SeaW = Sea Water SW = Swab W = Water WP = Wipe O = Other		Preservatives: 1 = $Na_2S_2O_3$ 2 = HCl 3 = HNO_3 4 = H_2SO_4 5 = NaOH 6 = Other			
1 Park Plaza, Suite 1000							
Irvine, CA 92614							

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Report To:	Paul Garcia	Number:	
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Phone:	858-558-1120	Global ID:	
Fax:	858-558-1121	Sampled By:	Tyler Steimel

	Sample ID	Sampling Date	Sampling Time	Matrix	Container No. / Size	Pres.	TPH Extended Range (8015B)	VOCs (8260B)	PCBs (8082)	PAHs (8270 SIM)	Luft-5 Metals (6010B)						Test Instructions / Comments
1	L4-8	4/5/18	1250	S	4+8oz	N/A											Hold
2	L4-12	"	1255	"	"	"											Hold
3	L13-2	"	800		"	"											
4	L13-4	"	810		"	"											
5	L13-12	"	817		"	"											
6	L14-3	"	1625	"	"	"	X		X								
7	L14-8	"	1630	"	"	"											Hold
8	L14-12	"	1635	"	"	"											Hold
9	L15-1		835				X		X								Hold
10	L15-2		842														

	Signature	Print Name	Company / Title	Date / Time
[1] Relinquished By:		Tyler Steimel	Apex	4/5/18 1950
[1] Received By:		C Kim	GA	4/5/18 1950
[2] Relinquished By:				
[2] Received By:				
[3] Relinquished By:				
[3] Received By:				

ENTHALPY ANALYTICAL		Chain of Custody Record		Turn Around Time (Rush by advanced notice only)			
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1 Park Plaza, Suite 1000							
Irvine, CA 92614							

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Phone:	858-558-1120	Global ID:	
Fax:	858-558-1121	Sampled By:	Tyler Steimel

	Sample ID	Sampling Date	Sampling Time	Matrix	Container No. / Size	Pres.	TPH Extended Range (8015B)	VOCs (8260B)	PCBs (8082)	PAHs (8270 SIM)	Luft-5 Metals (6010B)	Test Instructions / Comments
1	LIS-7	4/5/18	850	S	8+4oz	N/A						Hold
2	LIS-12	"	854	S	8+4oz	N/A						Hold
3	D4-1	"	958	S	4,8oz,3,40mL							Hold
4	D4-4	"	1003	S	"		X	X	X	X	X	
5	OW1-1	"	1431		"		X	X	X	X	X	
6	OW1-3	"	1440									Hold
7	OW1-6	"	1446									Hold
8	OW1-9	"	1455									Hold
9	OW1-12	"	1500									Hold
10	OW2-1	"	1556				X	X	X	X	X	

	Signature	Print Name	Company / Title	Date / Time
[1] Relinquished By:		Tyler Steimel	Apex	4/5/18 1950
[1] Received By:		G. Kim	EA	4/5/18 1950
[2] Relinquished By:				
[2] Received By:				
[3] Relinquished By:				
[3] Received By:				

ENTHALPY ANALYTICAL		Chain of Custody Record		Turn Around Time (Rush by advanced notice only)			
931 W. Barkley Ave., Orange, CA 92868	ENTHALPY analytical, inc.	Lab No:		Standard:	4 Day:	3 Day:	
Phone: (714) 771-6900 Fax: (714) 538-1209		Page: 5 of 6		2 Day:	1 Day:	Same Day:	
Billing: Enthalpy Analytical		Matrix: A = Air DW = Drinking Water FL = Food Liquid FS = Food Solid L = Liquid PP = Pure Product S = Solid SeaW = Sea Water SW = Swab W = Water WP = Wipe O = Other		Preservatives: 1 = $Na_2S_2O_3$ 2 = HCl 3 = HNO_3 4 = H_2SO_4 5 = NaOH 6 = Other			
1 Park Plaza, Suite 1000							
Irvine, CA 92614							

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Company:	Apex Companies	Name:	Sears Brea Mall
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Email:	paul.garcia@apexcos.com	P.O. #:	3616-A1000-003
Address:	10675 Sorrento Valley Road STE 203	Address:	100 Brea Mall
	San Diego, CA 92121		Brea, CA 92821
Phone:	858-558-1120	Global ID:	
Fax:	858-558-1121	Sampled By:	Tyler Steimel

	Sample ID	Sampling Date	Sampling Time	Matrix	Container No. / Size	Pres.	TPH Extended Range (8015B)	VOCs (8260B)	PCBs (8082)	PAHs (8270 SIM)	Luft-5 Metals (6010B)						Test Instructions / Comments
1	OW2-2	4/5/18	1600	S	4x8oz, 3, 40mL	NA											Hold
2	OW2-7	"	1611	"	"												Hold
3	OW2-5	"	1608	"	"												Hold
4	OW2-10	"	1615	"	"												Hold
5	OW2-12	"	1621	"	"												Hold
6	OW3-2		1509	"	"		X	X	X	X	X						
7	OW3-7		1515	"	"												Hold
8	OW3-12		1520	"	"												Hold
9	LIB-2		1700	S			X		X								
10	LIB-7		1708	✓													Hold

	Signature	Print Name	Company / Title	Date / Time
1 Relinquished By:		Tyler Steimel	Apex	4/5/18 1450
1 Received By:		G Kim	EA	4/5/18 1950
2 Relinquished By:				
2 Received By:				
3 Relinquished By:				
Received By:				

ENTHALPY ANALYTICAL	Chain of Custody Record	Turn Around Time (Rush by advanced notice only)
931 W. Barkley Ave., Orange, CA 92868 Phone: (714) 771-6900 Fax: (714) 538-1209	Lab No:	Standard: 4 Day: 3 Day:
Billing: Enthalpy Analytical 1 Park Plaza, Suite 1000 Irvine, CA 92614	Page: 6 of 6	2 Day: 1 Day: Same Day:

Matrix: A = Air DW = Drinking Water FL = Food Liquid FS = Food Solid L = Liquid PP = Pure Product S = Solid SeaW = Sea Water SW = Swab W = Water WP = Wipe O = Other

Preservatives: 1 = $Na_2S_2O_3$ 2 = HCl 3 = HNO_3 4 = H_2SO_4 5 = NaOH 6 = Other

CUSTOMER INFORMATION		PROJECT INFORMATION	
Company:	Apex Companies	Name:	Sears Brea Mall
Report To:	Paul Garcia	Number:	
Email:	paul.garcia@apexcos.com	P.O. #:	3616-A1000-003
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	San Diego, CA 92121		Brea, CA 92821
Phone:	858-558-1120	Global ID:	
Fax:	858-558-1121	Sampled By:	Tyler Steimel

	Sample ID	Sampling Date	Sampling Time	Matrix	Container No. / Size	Pres.	TPH C6-C10 (8015)	VOCs (8260B)	PCBs (8082	OA-H's (8270 SIM)	Lufft -5	Test Instructions / Comments
1	L16-12	4/5/18	1715	S	3402	N/A						Hold
2	OW4-1	"	1405		4, 80z, 340mL	"	x	x	x	x	x	
3	OW4-6	"	1410		4	"						Hold
4	OW4-12	"	1417		"	"						Hold
5												
6												
7												
8												
9												
10												

	Signature	Print Name	Company / Title	Date / Time
[1] Relinquished By:		Tyler Steimel	Apex	4/5/18 1950
[1] Received By:		G Kim	GA	4/5/18 1950
[2] Relinquished By:				
[2] Received By:				
[3] Relinquished By:				
[3] Received By:				

ENTHALPY ANALYTICAL
931 W. Barkley Ave., Orange, CA 92868
Phone: (714) 771-6900 Fax: (714) 538-1209
Billing: Enthalpy Analytical
1 Park Plaza, Suite 1000
Irvine, CA 92614

ENTHALPY analytical, inc.

Chain of Custody Record

Lab No:

Page: 1 of 6

Turn Around Time (Rush by advanced notice only)

Standard: | 4 Day: | 3 Day:
2 Day: | 1 Day: | Same Day:

Matrix: A = Air DW = Drinking Water FL = Food Liquid FS = Food Solid L = Liquid PP = Pure Product S = Solid SeaW = Sea Water SW = Swab W = Water WP = Wipe O = Other

Preservatives: 1 = $Na_2S_2O_3$ 2 = HCl 3 = HNO_3 4 = H_2SO_4 5 = NaOH 6 = Other

CUSTOMER INFORMATION		PROJECT INFORMATION	
Company:	Apex Companies	Name:	Sears Brea Mall
Report To:	Paul Garcia	Number:	
Email:	paul.garcia@apexcos.com	P.O. #:	3616-A1000-003
Address:	10675 Sorrento Valley Road STE 203	Address:	100 Brea Mall
	San Diego, CA 92121		Brea, CA 92821
Phone:	858-558-1120	Global ID:	
Fax:	858-558-1121	Sampled By:	Tyler Steimel

	Sample ID	Sampling Date	Sampling Time	Matrix	Container No. / Size	Pres.	TPH Extended Range (8015B)	VOCs (8260B)	PCBs (8082)	PAHs (8270 SIM)	Luft-5 Metals (6010B)	Test Instructions / Comments
FI-160	OT1-1	4/4/18	1615	S	4+8oz, 340mL	meoh						Hold
2	OT1-4	4/4/18	1620	"	"	"	X	X	X	X	X	
3	OT1-9	4/4/18	1642	"	"	"						Hold
4	OT1-12	4/4/18	1645	"	"	"						Hold
5	OT1-16	4/4/18	1650	"	"	"						Hold
6	OT1-6	4/5/18	817	"	"	"						Hold
7	L1-1	4/5/18	1015	"	4oz + 8oz	N/A						Hold
8	L1-2	"	1021	"	"	"						Hold
9	L1-4	"	1025	"	"	"	X		X			
10	L1-7	"	1038	"	"	"						Hold

	Signature	Print Name	Company / Title	Date / Time
[1] Relinquished By:		Tyler Steimel	Apex	4/5/18 1850
[1] Received By:		G Kim	EA	4/5/18 1850
[2] Relinquished By:				
[2] Received By:				
[3] Relinquished By:				
[3] Received By:				

ENTHALPY ANALYTICAL
931 W. Barkley Ave., Orange, CA 92868
Phone: (714) 771-6900 Fax: (714) 538-1209
Billing: Enthalpy Analytical
1 Park Plaza, Suite 1000
Irvine, CA 92614

ENTHALPY analytical, inc.

Chain of Custody Record

Lab No:

Page: 2 of 6

Turn Around Time (Rush by advanced notice only)

Standard: | 4 Day: | 3 Day:
2 Day: | 1 Day: | Same Day:

Matrix: A = Air DW = Drinking Water FL = Food Liquid FS = Food Solid L = Liquid PP = Pure Product S = Solid SeaW = Sea Water SW = Swab W = Water WP = Wipe O = Other

Preservatives: 1 = $Na_2S_2O_3$ 2 = HCl 3 = HNO_3 4 = H_2SO_4 5 = NaOH 6 = Other

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Company:	Apex Companies	Name:	Sears Brea Mall
Report To:	Paul Garcia	Number:	
Email:	paul.garcia@apexcos.com	P.O. #:	3616-A1000-003
Address:	10675 Sorrento Valley Road STE 203	Address:	100 Brea Mall
	San Diego, CA 92121		Brea, CA 92821
Phone:	858-558-1120	Global ID:	
Fax:	858-558-1121	Sampled By:	Tyler Steimel

	Sample ID	Sampling Date	Sampling Time	Matrix	Container No. / Size	Pres.	TPH Extended Range (8015B)	VOCs (8260B)	PCBs (8082)	PAHs (8270 SIM)	Luft-5 Metals (6010B)	Test Instructions / Comments
1	L1-12	4/5/18	1041	S	3, 4 oz	N/A						Hold
2	L2-1	"	1215	"	8+4 oz	N/A	X		X			Hold
3	L2-3	"	1220	"	8+4 oz	N/A	X		X			
4	L2-7	"	1224	"	8+4 oz	N/A						Hold
5	L2-12	"	1230	"	8+4 oz	N/A						Hold
6	L3-2	"	1150	"	"	N/A	X		X			
7	L3-8	"	1158	"	"	"						Hold
8	L3-12	"	1202	"	"	"						Hold
9	L3-3	"	1155	"	"	"						Hold
10	L4-2	"	1243	"			X		X			

	Signature	Print Name	Company / Title	Date / Time
1 Relinquished By:		Tyler Steimel	Apex	4/5/18 1950
1 Received By:		C Kim	EA	4/5/18 1950
2 Relinquished By:				
2 Received By:				
3 Relinquished By:				
3 Received By:				

ENTHALPY ANALYTICAL

931 W. Barkley Ave., Orange, CA 92868

Phone: (714) 771-6900 Fax: (714) 538-1209

Billing: Enthalpy Analytical

1 Park Plaza, Suite 1000

Irvine, CA 92614

ENTHALPY analytical, inc.

Chain of Custody Record

Lab No:

Page: 3 of 6

Turn Around Time (Rush by advanced notice only)

Standard: | 4 Day: | 3 Day:

2 Day: | 1 Day: | Same Day:

Matrix: A = Air DW = Drinking Water FL = Food Liquid FS = Food Solid L = Liquid PP = Pure Product S = Solid SeaW = Sea Water SW = Swab W = Water WP = Wipe O = Other

Preservatives: 1 = $Na_2S_2O_3$ 2 = HCl 3 = HNO_3 4 = H_2SO_4 5 = NaOH 6 = Other

CUSTOMER INFORMATION		PROJECT INFORMATION	
Company:	Apex Companies	Name:	Sears Brea Mall
Report To:	Paul Garcia	Number:	
Email:	paul.garcia@apexcos.com	P.O. #:	3616-A1000-003
Address:	10675 Sorrento Valley Road STE 203	Address:	100 Brea Mall
	San Diego, CA 92121		Brea, CA 92821
Phone:	858-558-1120	Global ID:	
Fax:	858-558-1121	Sampled By:	Tyler Steimel

	Sample ID	Sampling Date	Sampling Time	Matrix	Container No. / Size	Pres.	TPH Extended Range (8015B)	VOCs (8260B)	PCBs (8082)	PAHs (8270 SIM)	Luft-5 Metals (6010B)	Test Instructions / Comments
1	L4-8	4/5/18	1250	S	4+8 oz	N/A						Hold
2	L4-12	"	1255	"	"	"						Hold
3	L13-2	"	800	"	"	"						
4	L13-8	"	810	"	"	"						
5	L13-12	"	817	"	"	"						
6	L14-3	"	1625	"	"	"	X		X			
7	L14-8	"	1630	"	"	"						Hold
8	L14-12	"	1635	"	"	"						Hold
9	L15-1	"	835	"	"	"	X		X			~~Hold~~
10	L15-2	"	842	"	"	"						Hold

	Signature	Print Name	Company / Title	Date / Time
1 Relinquished By:		Tyler Steimel	Apex	4/5/18 1950
1 Received By:		C Kim	GA	4/5/18 1950
2 Relinquished By:				
2 Received By:				
3 Relinquished By:				
3 Received By:				

ENTHALPY ANALYTICAL

931 W. Barkley Ave., Orange, CA 92868

Phone: (714) 771-6900 Fax: (714) 538-1209

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1 Park Plaza, Suite 1000

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ENTHALPY analytical, inc.

Chain of Custody Record

Lab No:

Page: 4 of 6

Turn Around Time (Rush by advanced notice only)

Standard:		4 Day:		3 Day:	
2 Day:		1 Day:		Same Day:	

Matrix: A = Air DW = Drinking Water FL = Food Liquid FS = Food Solid L = Liquid PP = Pure Product S = Solid SeaW = Sea Water SW = Swab W = Water WP = Wipe O = Other

Preservatives: 1 = $Na_2S_2O_3$ 2 = HCl 3 = HNO_3 4 = H_2SO_4 5 = NaOH 6 = Other

CUSTOMER INFORMATION		PROJECT INFORMATION	
Company:	Apex Companies	Name:	Sears Brea Mall
Report To:	Paul Garcia	Number:	
Email:	paul.garcia@apexcos.com	P.O. #:	3616-A1000-003
Address:	10675 Sorrento Valley Road STE 203	Address:	100 Brea Mall
	San Diego, CA 92121		Brea, CA 92821
Phone:	858-558-1120	Global ID:	
Fax:	858-558-1121	Sampled By:	Tyler Steimel

	Sample ID	Sampling Date	Sampling Time	Matrix	Container No. / Size	Pres.	TPH Extended Range (8015B)	VOCs (8260B)	PCBs (8082)	PAHs (8270 SIM)	Luft-5 Metals (6010B)	Test Instructions / Comments
1	L15-7	4/5/18	850	S	8+4oz	N/A						Hold
2	L15-12	"	854	S	8+4oz	N/A						Hold
3	D4-1	"	958	S	4, 8oz, 3, 40ml							Hold
4	D4-4	"	1003	S	"		X	X	X	X	X	
5	OW1-1	"	1431		"		X	X	X	X	X	
6	OW1-3	"	1440									Hold
7	OW1-6	"	1446									Hold
8	OW1-9	"	1455									Hold
9	OW1-12	"	1500									Hold
10	OW2-1	"	1556				X	X	X	X	X	

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	Signature	Print Name	Company / Title	Date / Time
[1] Relinquished By:		Tyler Steimel	Apex	4/5/18 1850
[1] Received By:		G. Kim	EA	4/5/18 1950
[2] Relinquished By:				
[2] Received By:				
[3] Relinquished By:				
[3] Received By:				

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931 W. Barkley Ave., Orange, CA 92868
Phone: (714) 771-6900 Fax: (714) 538-1209

Billing: Enthalpy Analytical
1 Park Plaza, Suite 1000
Irvine, CA 92614

ENTHALPY analytical, inc.

Chain of Custody Record

Lab No:
Page: 5 of 6

Turn Around Time (Rush by advanced notice only)

Standard:	4 Day:	3 Day:
2 Day:	1 Day:	Same Day:

Matrix: A = Air DW = Drinking Water FL = Food Liquid FS = Food Solid L = Liquid PP = Pure Product S = Solid SeaW = Sea Water SW = Swab W = Water WP = Wipe O = Other

Preservatives: 1 = $Na_2S_2O_3$ 2 = HCl 3 = HNO_3 4 = H_2SO_4 5 = NaOH 6 = Other

CUSTOMER INFORMATION		PROJECT INFORMATION	
Company:	Apex Companies	Name:	Sears Brea Mall
Report To:	Paul Garcia	Number:	
Email:	paul.garcia@apexcos.com	P.O. #:	3616-A1000-003
Address:	10675 Sorrento Valley Road STE 203	Address:	100 Brea Mall
	San Diego, CA 92121		Brea, CA 92821
Phone:	858-558-1120	Global ID:	
Fax:	858-558-1121	Sampled By:	Tyler Steimel

	Sample ID	Sampling Date	Sampling Time	Matrix	Container No. / Size	Pres.	TPH Extended Range (8015B)	VOCs (8260B)	PCBs (8082)	PAHs (8270 SIM)	Luft-5 Metals (6010B)	Test Instructions / Comments
1	OW2-2	4/5/18	1600	S	4x8oz, 3x40mL	N/A						Hold
2	OW2-7	"	1611	"	"							Hold
3	OW2-5	"	1608	"	"							Hold
4	OW2-10	"	1615	"	"							Hold
5	OW2-12	"	1621	"	"							Hold
6	OW3-2		1509	"	"		X	X	X	X	X	
7	OW3-7		1515	"	"							Hold
8	OW3-12		1520	"	"							Hold
9	LIB-2		1700	S			X		X			
10	LIB-7		1708	S								Hold

	Signature	Print Name	Company / Title	Date / Time
1 Relinquished By:		Tyler Steimel	Apex	4/5/18 1750
1 Received By:		G Kim	EA	4/5/18 1950
2 Relinquished By:				
2 Received By:				
3 Relinquished By:				
Received By:				

ENTHALPY ANALYTICAL	Chain of Custody Record	Turn Around Time (Rush by advanced notice only)
931 W. Barkley Ave., Orange, CA 92868 Phone: (714) 771-6900 Fax: (714) 538-1209	Lab No:	Standard: 4 Day: 3 Day:
Billing: Enthalpy Analytical 1 Park Plaza, Suite 1000 Irvine, CA 92614	Page: 6 of 6	2 Day: 1 Day: Same Day:

Matrix: A = Air DW = Drinking Water FL = Food Liquid FS = Food Solid L = Liquid PP = Pure Product S = Solid SeaW = Sea Water SW = Swab W = Water WP = Wipe O = Other

Preservatives: 1 = $Na_2S_2O_3$ 2 = HCl 3 = HNO_3 4 = H_2SO_4 5 = NaOH 6 = Other

CUSTOMER INFORMATION		PROJECT INFORMATION	
Company:	Apex Companies	Name:	Sears Brea Mall
Report To:	Paul Garcia	Number:	
Email:	paul.garcia@apexcos.com	P.O. #:	3616-A1000-003
Address:	10675 Sorrento Valley Road STE 203	Address:	100 Brea Mall
	San Diego, CA 92121		Brea, CA 92821
Phone:	858-558-1120	Global ID:	
Fax:	858-558-1121	Sampled By:	Tyler Steimel

	Sample ID	Sampling Date	Sampling Time	Matrix	Container No. / Size	Pres.	TPH C6/C36	VOCs (8260B)	MTBE (8260B)	OA-H's (8270 SIM)	Lead - 5	Analysis Request	Test Instructions / Comments
1	L16-12	4/5/18	1715	S	3 4oz	N/A							Hold
2	OW4-1	"	1405		4, 8oz, 3 40mL	"	x	x	x	x	x		
3	OW4-6	"	1416		4	"							Hold
4	OW4-12	"	1417	↓	"	"							Hold
5													
6													
7													
8													
9													
10													

F-105

	Signature	Print Name	Company / Title	Date / Time
1 Relinquished By:		Tyler Steimel	Apex	4/5/18 1950
1 Received By:			GA	4/5/18 1950
2 Relinquished By:				
2 Received By:				
3 Relinquished By:				
3 Received By:				

ENTHALPY ANALYTICAL

SAMPLE ACCEPTANCE CHECKLIST

Section 1

Client: APEX Companies Project: Sears Brea Mall

Date Received: 4/5/18 Sampler's Name Present: ☑ Yes ☐ No

Section 2

Sample(s) received in a cooler? ☑ Yes, How many? 2 ☐ No (skip section 2) Sample Temp (°C) (No Cooler): _____

Sample Temp (°C), One from each cooler: #1: 4.8 #2: 4.2 #3: _____ #4: _____

(Acceptance range is < 6°C but not frozen (for Microbiology samples, acceptance range is < 10°C but not frozen). It is acceptable for samples collected the same day as sample receipt to have a higher temperature as long as there is evidence that cooling has begun.)

Shipping Information: _____

Section 3

Was the cooler packed with: ☑ Ice ☐ Ice Packs ☐ Bubble Wrap ☐ Styrofoam ☐ Paper ☐ None ☐ Other _____

Cooler Temp (°C): #1: 4.2 #2: 1.9 #3: _____ #4: _____

Section 4	YES	NO	N/A
Was a COC received?	✓		
Are sample IDs present?	✓		
Are sampling dates & times present?	✓		
Is a relinquished signature present?	✓		
Are the tests required clearly indicated on the COC?	✓		
Are custody seals present?		✓	
If custody seals are present, were they intact?			✓
Are all samples sealed in plastic bags? (Recommended for Microbiology samples)	✓		
Did all samples arrive intact? If no, indicate in Section 4 below.	✓		
Did all bottle labels agree with COC? (ID, dates and times)	✓		
Were the samples collected in the correct containers for the required tests?	✓		
Are the containers labeled with the correct preservatives?	✓		
Is there headspace in the VOA vials greater than 5-6 mm in diameter?			✓
Was a sufficient amount of sample submitted for the requested tests?	✓		

Section 5 Explanations/Comments

Section 6

For discrepancies, how was the Project Manager notified? ☐ Verbal PM Initials: _____ Date/Time _____

☐ Email (email sent to/on): _____ / _____

Project Manager's response:

Completed By: _____ Date: 4/5/18

Enthalpy Analytical, a subsidiary of Montrose Environmental Group, Inc.
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DRAFT

Enthalpy Analytical, LLC
931 W. Barkley Ave - Orange, CA 92868
Tel: (714)771-6900 Fax: (714)538-1209
www.enthalpy.com
info-sc@enthalpy.com

MONTROSE ENVIRONMENTAL

Client:	APEX
Address:	10675 Sorrento Valley Rd. Suite 203 San Diego, CA 92121
Attn:	Paul Garcia
Comments:	Sears Brea Mall 3616-A1000-003 Supplemental Report

Lab Request:	401424
Report Date:	04/24/2018
Date Received:	04/05/2018
Client ID:	10359

This laboratory request covers the following listed samples which were analyzed for the parameters indicated on the attached Analytical Result Report. All analyses were conducted using the appropriate methods. Methods accredited by NELAC are indicated on the report. This cover letter is an integral part of the final report.

Sample #	Client Sample ID
401424-003	OT1-9
401424-004	OT1-12

DRAFT

Thank you for the opportunity to be of service to your company. Please feel free to call if there are any questions regarding this report or if we can be of further service.

Diane M. Galvan

Report Review performed by: Diane Galvan, Project Manager

NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 60 days from date received.

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ACCREDITED IN ACCORDANCE WITH nelac

Matrix:	Solid	**Client:**	APEX	**Collector:**	Client
Sampled:	04/04/2018 16:42	**Site:**			
Sample #:	**401424-003**	**Client Sample #:**	OT1-9	**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 8015B *NELAC*	Prep Method: EPA 5030					QCBatchID:		QC1190343
TPH Gasoline	ND	1.4	4.2	mg/Kg		04/20/18	HC	T4
Surrogate	*% Recovery*		*Limits*	*Notes*				
4-Bromofluorobenzene (SUR)	*85*		*60-140*					
Method: EPA 8015M	Prep Method: EPA 3580A					QCBatchID:		QC1190335
TPH Diesel	ND	1	10	mg/Kg	04/20/18	04/20/18	JAR	T4
TPH Motor Oil	ND	1	20	mg/Kg	04/20/18	04/20/18	JAR	T4
Surrogate	*% Recovery*		*Limits*	*Notes*				
Triacontane (SUR)	*98*		*50-150*					

Matrix:	Solid	**Client:**	APEX	**Collector:**	Client
Sampled:	04/04/2018 16:45	**Site:**			
Sample #:	**401424-004**	**Client Sample #:**	OT1-12	**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 8015B *NELAC*	Prep Method: EPA 5030					QCBatchID:		QC1190343
TPH Gasoline	ND	1.4	4.2	mg/Kg		04/20/18	HC	T4
Surrogate	*% Recovery*		*Limits*	*Notes*				
4-Bromofluorobenzene (SUR)	*85*		*60-140*					
Method: EPA 8015M	Prep Method: EPA 3580A					QCBatchID:		QC1190335
TPH Diesel	ND	1	10	mg/Kg	04/20/18	04/20/18	JAR	T4
TPH Motor Oil	ND	1	20	mg/Kg	04/20/18	04/20/18	JAR	T4
Surrogate	*% Recovery*		*Limits*	*Notes*				
Triacontane (SUR)	*89*		*50-150*					

DRAFT

QCBatchID: QC1190335	**Analyst:** Jarriaga		**Method:** EPA 8015M		
Matrix: Solid	**Analyzed:** 04/20/2018		**Instrument:** SVOA-GC (group)		

Blank Summary

Analyte	Blank Result	Units		RDL	Notes
QC1190335MB1					
TPH (C10 to C28)	ND	mg/Kg		10	
TPH Diesel	ND	mg/Kg		10	
TPH Motor Oil	ND	mg/Kg		20	

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount LCS	Spike Amount LCSD	Spike Result LCS	Spike Result LCSD	Units	Recoveries LCS	Recoveries LCSD	RPD	Limits %Rec	Limits RPD	Notes
QC1190335LCS1											
TPH (C10 to C28)	250		230		mg/Kg	92			70-130		

DRAFT

QCBatchID: QC1190343	**Analyst:** hongling	**Method:** EPA 8015B			
Matrix: Solid	**Analyzed:** 04/20/2018	**Instrument:** VOA-GC (group)			

Blank Summary

Analyte	Blank Result	Units		RDL	Notes	
QC1190343MB1						
TPH Gasoline	ND	mg/Kg		3		

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount		Spike Result		Units	Recoveries		RPD	Limits		Notes
	LCS	LCSD	LCS	LCSD		LCS	LCSD		%Rec	RPD	
QC1190343LCS1, QC1190343LCSD1											
TPH Gasoline	5	5	5.88	5.86	mg/Kg	118	117	0	70-130	20	

DRAFT

Data Qualifiers and Definitions

Qualifiers

A	See Report Comments.
B	Analyte was present in an associated method blank.
B1	Analyte was present in a sample and associated method blank greater than MDL but less than RDL.
BQ1	No valid test replicates. Sample Toxicity is possible. Best result was reported.
BQ2	No valid test replicates.
BQ3	No valid test replicates. Final DO is less than 1.0 mg/L. Result may be greater.
BQ4	Minor Dissolved Oxygen loss was observed in the blank water check, however, the LCS was within criteria, validating the batch.
C	Possible laboratory contamination.
D	RPD was not within control limits. The sample data was reported without further clarification.
D1	Lesser amount of sample was used due to insufficient amount of sample supplied.
D2	Reporting limit is elevated due to sample matrix. Target analyte was not detected above the elevated reporting limit.
D3	Insufficient sample was supplied for TCLP. Client was notified. TCLP was performed per the Client's instructions.
DW	Sample result is calculated on a dry weigh basis.
E	Concentration is estimated because it exceeds the quantification limits of the method.
I	The sample was read outside of the method required incubation period.
J	Reported value is estimated
L	The laboratory control sample (LCS) or laboratory control sample duplicate (LCSD) was out of control limits. Associated sample data was reported with qualifier.
M	The matrix spike (MS) or matrix spike duplicate (MSD) was not within control limits due to matrix interference. The associated LCS and/or LCSD was within control limits and the sample data was reported without further clarification.
M1	The matrix spike (MS) or matrix spike duplicate (MSD) is not within control limits due to matrix interference.
M2	The matrix spike (MS) or matrix spike duplicate (MSD) was not within control limits. The associated LCS and/or LCSD was not within control limits. Sample result is estimated.
N1	Sample chromatography does not match the specified TPH standard pattern.
NC	The analyte concentration in the sample exceeded the spike level by a factor of four or greater, spike recovery and limits do not apply.
P	Sample was received without proper preservation according to EPA guidelines.
P1	Temperature of sample storage refrigerator was out of acceptance limits.
P2	The sample was preserved within 24 hours of collection in accordance with EPA 218.6.
P3	Per Client request, sample was composited for volatile analysis. Sample compositing for volatile analysis is not recommended due to potential loss of target analytes. Results may be biased low.
Q1	Analyte Calibration Verification exceeds criteria. The result is estimated.
Q2	Analyte calibration was not verified and the result was estimated.
Q3	Analyte initial calibration was not available or exceeds criteria. The result was estimated.
S	The surrogate recovery was out of control limits due to matrix interference. The associated method blank surrogate recovery was within control limits and the sample data was reported without further clarification.
S1	The associated surrogate recovery was out of control limits; result is estimated.
S2	The surrogate was diluted out due to the presence of high concentrations of target and/or non-target compounds. Surrogate recoveries in the associated batch QC met recovery criteria.
S3	Internal Standard did not meet recovery limits. Analyte concentration is estimated.
T	Sample was extracted/analyzed past the holding time.
T1	Reanalysis was reported past hold time due to failing replicates in the original analysis (BOD only).
T2	Sample was analyzed ASAP but received and analyzed past the 15 minute holding time.
T3	Sample received and analyzed out of hold time per client's request.
T4	Sample was analyzed out of hold time per client's request.
T5	Reanalysis was reported past hold time. The original analysis was within hold time, but not reportable.
T6	Hold time is indeterminable due to unspecified sampling time.
T7	Sample was analyzed past hold time due to insufficient time remaining at time of receipt.

Definitions

DF	Dilution Factor
MDL	Method Detection Limit. Result is reported ND when it is less than or equal to MDL.
ND	Analyte was not detected or was less than the detection limit.
NR	Not Reported. See Report Comments.
RDL	Reporting Detection Limit
TIC	Tentatively Identified Compounds

DRAFT

From: Paul Garcia
To: Diane Galvan
Cc: Tyler Steimel
Subject: RE: Sears Brea Mall, Enthalpy Analytical Final Report #401424
Date: Thursday, April 19, 2018 9:16:06 AM
Attachments: image001.png

Diane,

Please run samples OT1-9 and OT1-12 from this work order for TPH extended.
72hr TAT

Thanks,
Paul

Paul Garcia
Project Manager

Apex Companies, LLC
10675 Sorrento Valley Rd. Suite 203
San Diego, CA 92121

O) 858-558-1120 x1507 M) 760-533-9604

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Tel: (714)771-6900 Fax: (714)538-1209
www.enthalpy.com
info-sc@enthalpy.com

MONTROSE ENVIRONMENTAL

Client:	APEX	Lab Request:	401424
Address:	10675 Sorrento Valley Rd. Suite 203 San Diego, CA 92121	Report Date:	04/30/2018
		Date Received:	04/05/2018
		Client ID:	10359
Attn:	Paul Garcia		

Comments: Sears Brea Mall
3616-A1000-003

Supplemental Report 2

This laboratory request covers the following listed samples which were analyzed for the parameters indicated on the attached Analytical Result Report. All analyses were conducted using the appropriate methods. Methods accredited by NELAC are indicated on the report. This cover letter is an integral part of the final report.

Sample #	Client Sample ID
401424-023	L13-2

DRAFT

Thank you for the opportunity to be of service to your company. Please feel free to call if there are any questions regarding this report or if we can be of further service.

Diane M. Galvan

Report Review performed by: Diane Galvan, Project Manager

NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 60 days from date received.

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ACCREDITED IN ACCORDANCE WITH nelac

Matrix:	Solid	**Client:**	APEX	**Collector:**	Client
Sampled:	04/05/2018 08:00	**Site:**			
Sample #:	**401424-023**	**Client Sample #:**	L13-2	**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 8015B NELAC	Prep Method: EPA 5030					QCBatchID: QC1190583		
TPH Gasoline	ND	1	3	mg/Kg		04/27/18	HC	
Surrogate	*% Recovery*		*Limits*	*Notes*				
4-Bromofluorobenzene (SUR)	*95*		*60-140*					
Method: EPA 8015M	Prep Method: EPA 3580A					QCBatchID: QC1190621		
TPH Diesel	ND	1	10	mg/Kg	04/30/18	04/30/18	JAR	T4
TPH Motor Oil	ND	1	20	mg/Kg	04/30/18	04/30/18	JAR	T4
Surrogate	*% Recovery*		*Limits*	*Notes*				
Triacontane (SUR)	*111*		*50-150*					
Method: EPA 8082 NELAC	Prep Method: EPA 3545					QCBatchID: QC1190565		
PCB-1016	ND	1	50	ug/Kg	04/26/18	04/30/18	MTS	
PCB-1221	ND	1	50	ug/Kg	04/26/18	04/30/18	MTS	
PCB-1232	ND	1	50	ug/Kg	04/26/18	04/30/18	MTS	
PCB-1242	ND	1	50	ug/Kg	04/26/18	04/30/18	MTS	
PCB-1248	ND	1	50	ug/Kg	04/26/18	04/30/18	MTS	
PCB-1254	ND	1	50	ug/Kg	04/26/18	04/30/18	MTS	
PCB-1260	ND	1	50	ug/Kg	04/26/18	04/30/18	MTS	
PCB-1262	ND	1	50	ug/Kg	04/26/18	04/30/18	MTS	
PCB-1268	ND	1	50	ug/Kg	04/26/18	04/30/18	MTS	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Decachlorobiphenyl DCB (SUR)	*87*		*50-150*					

DRAFT

QCBatchID:	**QC1190565**	**Analyst:**	Abanh	**Method:**	EPA 8082
Matrix:	Solid	**Analyzed:**	04/26/2018	**Instrument:**	SVOA-GC (group)

Blank Summary

Analyte	Blank Result	Units		RDL	Notes
QC1190565MB1					
PCB-1016	ND	ug/Kg		50	
PCB-1221	ND	ug/Kg		50	
PCB-1232	ND	ug/Kg		50	
PCB-1242	ND	ug/Kg		50	
PCB-1248	ND	ug/Kg		50	
PCB-1254	ND	ug/Kg		50	
PCB-1260	ND	ug/Kg		50	
PCB-1262	ND	ug/Kg		50	
PCB-1268	ND	ug/Kg		50	

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount LCS	Spike Amount LCSD	Spike Result LCS	Spike Result LCSD	Units	Recoveries LCS	Recoveries LCSD	RPD	Limits %Rec	Limits RPD	Notes
QC1190565LCS1											
PCB-1016	500		460		ug/Kg	92			70-130		
PCB-1260	500		500		ug/Kg	100			70-130		

Matrix Spike/Matrix Spike Duplicate Summary

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1190565MS1, QC1190565MSD1												**Source: 401424-023**
PCB-1016	ND	500	500	470	480	ug/Kg	94	96	2.1	70-130	20	
PCB-1260	ND	500	500	480	490	ug/Kg	96	98	2.1	70-130	20	

DRAFT

QCBatchID: QC1190583	**Analyst:** hongling		**Method:** EPA 8015B		
Matrix: Solid	**Analyzed:** 04/27/2018		**Instrument:** VOA-GC (group)		

Blank Summary

Analyte	Blank Result	Units		RDL	Notes
QC1190583MB1					
TPH Gasoline	ND	mg/Kg		3	

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount LCS	Spike Amount LCSD	Spike Result LCS	Spike Result LCSD	Units	Recoveries LCS	Recoveries LCSD	RPD	Limits %Rec	Limits RPD	Notes
QC1190583LCS1, QC1190583LCSD1											
TPH Gasoline	5	5	5.29	5.33	mg/Kg	106	107	1	70-130	20	

Matrix Spike/Matrix Spike Duplicate Summary

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1190583MS1, QC1190583MSD1												**Source: 401424-023**
TPH Gasoline	ND	5	5	4.10	4.26	mg/Kg	82	85	3.8	70-130	20	

DRAFT

QCBatchID: QC1190621	Analyst: Jarriaga	Method: EPA 8015M
Matrix: Solid	Analyzed: 04/30/2018	Instrument: SVOA-GC (group)

Blank Summary

Analyte	Blank Result	Units		RDL	Notes
QC1190621MB1					
TPH (C10 to C28)	ND	mg/Kg		10	
TPH (C13 to C28)	ND	mg/Kg		10	
TPH (C28 to C40)	ND	mg/Kg		20	
TPH (C29 to C40)	ND	mg/Kg		20	
TPH (C6 to C12)	ND	mg/Kg		10	
TPH (C8 to C10)	ND	mg/Kg		10	
TPH Diesel	ND	mg/Kg		10	
TPH Motor Oil	ND	mg/Kg		20	

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount LCS	Spike Amount LCSD	Spike Result LCS	Spike Result LCSD	Units	Recoveries LCS	Recoveries LCSD	RPD	Limits %Rec	Limits RPD	Notes
QC1190621LCS1											
TPH (C10 to C28)	250		230		mg/Kg	92			70-130		

Matrix Spike/Matrix Spike Duplicate Summary

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1190621MS1, QC1190621MSD1												**Source: 401424-023**
TPH (C10 to C28)	ND	250	250	270	260	mg/Kg	108	104	3.8	70-130	20	

DRAFT

Data Qualifiers and Definitions

Qualifiers

A	See Report Comments.
B	Analyte was present in an associated method blank.
B1	Analyte was present in a sample and associated method blank greater than MDL but less than RDL.
BQ1	No valid test replicates. Sample Toxicity is possible. Best result was reported.
BQ2	No valid test replicates.
BQ3	No valid test replicates. Final DO is less than 1.0 mg/L. Result may be greater.
BQ4	Minor Dissolved Oxygen loss was observed in the blank water check, however, the LCS was within criteria, validating the batch.
C	Possible laboratory contamination.
D	RPD was not within control limits. The sample data was reported without further clarification.
D1	Lesser amount of sample was used due to insufficient amount of sample supplied.
D2	Reporting limit is elevated due to sample matrix. Target analyte was not detected above the elevated reporting limit.
D3	Insufficient sample was supplied for TCLP. Client was notified. TCLP was performed per the Client's instructions.
DW	Sample result is calculated on a dry weigh basis.
E	Concentration is estimated because it exceeds the quantification limits of the method.
I	The sample was read outside of the method required incubation period.
J	Reported value is estimated
L	The laboratory control sample (LCS) or laboratory control sample duplicate (LCSD) was out of control limits. Associated sample data was reported with qualifier.
M	The matrix spike (MS) or matrix spike duplicate (MSD) was not within control limits due to matrix interference. The associated LCS and/or LCSD was within control limits and the sample data was reported without further clarification.
M1	The matrix spike (MS) or matrix spike duplicate (MSD) is not within control limits due to matrix interference.
M2	The matrix spike (MS) or matrix spike duplicate (MSD) was not within control limits. The associated LCS and/or LCSD was not within control limits. Sample result is estimated.
N1	Sample chromatography does not match the specified TPH standard pattern.
NC	The analyte concentration in the sample exceeded the spike level by a factor of four or greater, spike recovery and limits do not apply.
P	Sample was received without proper preservation according to EPA guidelines.
P1	Temperature of sample storage refrigerator was out of acceptance limits.
P2	The sample was preserved within 24 hours of collection in accordance with EPA 218.6.
P3	Per Client request, sample was composited for volatile analysis. Sample compositing for volatile analysis is not recommended due to potential loss of target analytes. Results may be biased low.
Q1	Analyte Calibration Verification exceeds criteria. The result is estimated.
Q2	Analyte calibration was not verified and the result was estimated.
Q3	Analyte initial calibration was not available or exceeds criteria. The result was estimated.
S	The surrogate recovery was out of control limits due to matrix interference. The associated method blank surrogate recovery was within control limits and the sample data was reported without further clarification.
S1	The associated surrogate recovery was out of control limits; result is estimated.
S2	The surrogate was diluted out due to the presence of high concentrations of target and/or non-target compounds. Surrogate recoveries in the associated batch QC met recovery criteria.
S3	Internal Standard did not meet recovery limits. Analyte concentration is estimated.
T	Sample was extracted/analyzed past the holding time.
T1	Reanalysis was reported past hold time due to failing replicates in the original analysis (BOD only).
T2	Sample was analyzed ASAP but received and analyzed past the 15 minute holding time.
T3	Sample received and analyzed out of hold time per client's request.
T4	Sample was analyzed out of hold time per client's request.
T5	Reanalysis was reported past hold time. The original analysis was within hold time, but not reportable.
T6	Hold time is indeterminable due to unspecified sampling time.
T7	Sample was analyzed past hold time due to insufficient time remaining at time of receipt.

Definitions

DF	Dilution Factor
MDL	Method Detection Limit. Result is reported ND when it is less than or equal to MDL.
ND	Analyte was not detected or was less than the detection limit.
NR	Not Reported. See Report Comments.
RDL	Reporting Detection Limit
TIC	Tentatively Identified Compounds

DRAFT

ENTHALPY ANALYTICAL

931 W. Barkley Ave., Orange, CA 92868

Phone: (714) 771-6900 Fax: (714) 538-1209

Billing: Enthalpy Analytical

1 Park Plaza, Suite 1000

Irvine, CA 92614

ENTHALPY analytical, inc.

Chain of Custody Record

Lab No:

Page: 3 of 6

Turn Around Time (Rush by advanced notice only)

Standard: | 4 Day: | 3 Day:

2 Day: | 1 Day: | Same Day:

Matrix: A = Air DW = Drinking Water FL = Food Liquid FS = Food Solid L = Liquid PP = Pure Product S = Solid SeaW = Sea Water SW = Swab W = Water WP = Wipe O = Other

Preservatives: 1 = $Na_2S_2O_3$ 2 = HCl 3 = HNO_3 4 = H_2SO_4 5 = NaOH 6 = Other

CUSTOMER INFORMATION		PROJECT INFORMATION	
Company:	Apex Companies	Name:	Sears Brea Mall
Report To:	Paul Garcia	Number:	
Email:	paul.garcia@apexcos.com	P.O. #:	3616-A1000-003
Address:	10675 Sorrento Valley Road STE 203	Address:	100 Brea Mall
	San Diego, CA 92121		Brea, CA 92821
Phone:	858-558-1120	Global ID:	
Fax:	858-558-1121	Sampled By:	Tyler Steimel

Need a two day turnaround for this sample. TPH and PCB's

	Sample ID	Sampling Date	Sampling Time	Matrix	Container No. / Size	Pres.	TPH Extended Range (8015B)	VOCs (8260B)	PCBs (8082)	PAHs (8270 SIM)	Luft-5 Metals (6010B)	Test Instructions / Comments
1	EL4-8	4/5/18	1250	S	4+8 oz	N/A						Hold
2	EL4-12	"	1255	"	"	"						Hold
3	EL3-2	"	800		"	"	X		X			
4	EL3-8	"	810		"	"						Hold
5	EL3-12	"	817		"	"						
6	EL4-3	"	1625	"	"	"	X		X			
7	EL4-8	"	1630	"	"	"						Hold
8	EL4-12	"	1635	"	"	"						Hold
9	EL5-1		835				X		X			~~Hold~~
10	EL5-2		842									Hold

F-179

	Signature	Print Name	Company / Title	Date / Time
1 Relinquished By:		Tyler Steimel	Apex	4/5/18 1950
1 Received By:		C Kim	GA	4/5/18 1950
2 Relinquished By:				
2 Received By:				
3 Relinquished By:				
3 Received By:				

Enthalpy Analytical, LLC
931 W. Barkley Ave - Orange, CA 92868
Tel: (714)771-6900 Fax: (714)538-1209
www.enthalpy.com
info-sc@enthalpy.com

MONTROSE ENVIRONMENTAL

Client: APEX
Address: 10675 Sorrento Valley Rd.
Suite 203
San Diego, CA 92121
Attn: Paul Garcia

Lab Request: 401424
Report Date: 05/09/2018
Date Received: 04/05/2018
Client ID: 10359

Comments: Sears Brea Mall
3616-A1000-003

Supplemental Report 3

This laboratory request covers the following listed samples which were analyzed for the parameters indicated on the attached Analytical Result Report. All analyses were conducted using the appropriate methods. Methods accredited by NELAC are indicated on the report. This cover letter is an integral part of the final report.

Sample #	Client Sample ID
401424-036	OW1-3
401424-043	OW2-5
401424-047	OW3-7
401424-053	OW4-6

DRAFT

Thank you for the opportunity to be of service to your company. Please feel free to call if there are any questions regarding this report or if we can be of further service.

Diane M. Galvan

Report Review performed by: Diane Galvan, Project Manager

NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 60 days from date received.

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ACCREDITED IN ACCORDANCE WITH nelac

Matrix:	Solid	**Client:**	APEX	**Collector:**	Client
Sampled:	04/05/2018 14:40	**Site:**			
Sample #:	**401424-036**	**Client Sample #:**	OW1-3	**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 6010B *NELAC* Prep Method: EPA 3050B						QCBatchID: QC1190894		
Cadmium	**1.65**	1	0.5	mg/Kg	05/08/18	05/08/18	KLN	
Chromium	**8.85**	1	1	mg/Kg	05/08/18	05/08/18	KLN	
Lead	**1.86**	1	1	mg/Kg	05/08/18	05/08/18	KLN	
Nickel	**11.3**	1	1.5	mg/Kg	05/08/18	05/08/18	KLN	
Zinc	**17.1**	1	5	mg/Kg	05/08/18	05/08/18	KLN	
Method: EPA 8015M Prep Method: EPA 3580A						QCBatchID: QC1190932		
TPH Diesel	ND	1	10	mg/Kg	05/09/18	05/09/18	JAR	
TPH Motor Oil	ND	1	20	mg/Kg	05/09/18	05/09/18	JAR	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Triacontane (SUR)	*86*		*50-150*					
Method: EPA 8082 *NELAC* Prep Method: EPA 3545						QCBatchID: QC1190875		
PCB-1016	ND	1	50	ug/Kg	05/07/18	05/08/18	MTS	
PCB-1221	ND	1	50	ug/Kg	05/07/18	05/08/18	MTS	
PCB-1232	ND	1	50	ug/Kg	05/07/18	05/08/18	MTS	
PCB-1242	ND	1	50	ug/Kg	05/07/18	05/08/18	MTS	
PCB-1248	ND	1	50	ug/Kg	05/07/18	05/08/18	MTS	
PCB-1254	ND	1	50	ug/Kg	05/07/18	05/08/18	MTS	
PCB-1260	ND	1	50	ug/Kg	05/07/18	05/08/18	MTS	
PCB-1262	ND	1	50	ug/Kg	05/07/18	05/08/18	MTS	
PCB-1268	ND	1	50	ug/Kg	05/07/18	05/08/18	MTS	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Decachlorobiphenyl DCB (SUR)	*79*		*50-150*					
Method: EPA 8270CM Prep Method: EPA 3545						QCBatchID: QC1190887		
1-Methylnaphthalene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
2-Methylnaphthalene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Acenaphthene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Acenaphthylene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Anthracene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Benz(a)anthracene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Benzo(a)pyrene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Benzo(b)fluoranthene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Benzo(g,h,i)perylene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Benzo(k)fluoranthene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Chrysene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Dibenz(a,h)anthracene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Fluoranthene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Fluorene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Indeno(1,2,3-cd)pyrene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Naphthalene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Phenanthrene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Pyrene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Surrogate	*% Recovery*		*Limits*	*Notes*				
2-Fluorobiphenyl (SUR)	*94*		*30-120*					
Nitrobenzene-d5 (SUR)	*101*		*27-125*					
p-Terphenyl (SUR)	*113*		*33-155*					

DRAFT

Matrix:	Solid	**Client:**	APEX	**Collector:**	Client
Sampled:	04/05/2018 16:08	**Site:**			
Sample #:	**401424-043**	**Client Sample #:**	OW2-5	**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 6010B *NELAC* Prep Method: EPA 3050B						QCBatchID: QC1190894		
Cadmium	**2.09**	1	0.5	mg/Kg	05/08/18	05/08/18	KLN	
Chromium	**11.8**	1	1	mg/Kg	05/08/18	05/08/18	KLN	
Lead	**3.10**	1	1	mg/Kg	05/08/18	05/08/18	KLN	
Nickel	**14.6**	1	1.5	mg/Kg	05/08/18	05/08/18	KLN	
Zinc	**27.0**	1	5	mg/Kg	05/08/18	05/08/18	KLN	
Method: EPA 8015M Prep Method: EPA 3580A						QCBatchID: QC1190932		
TPH Diesel	ND	1	10	mg/Kg	05/09/18	05/09/18	JAR	
TPH Motor Oil	ND	1	20	mg/Kg	05/09/18	05/09/18	JAR	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Triacontane (SUR)	*79*		*50-150*					
Method: EPA 8082 *NELAC* Prep Method: EPA 3545						QCBatchID: QC1190875		
PCB-1016	ND	1	50	ug/Kg	05/07/18	05/08/18	MTS	
PCB-1221	ND	1	50	ug/Kg	05/07/18	05/08/18	MTS	
PCB-1232	ND	1	50	ug/Kg	05/07/18	05/08/18	MTS	
PCB-1242	ND	1	50	ug/Kg	05/07/18	05/08/18	MTS	
PCB-1248	ND	1	50	ug/Kg	05/07/18	05/08/18	MTS	
PCB-1254	ND	1	50	ug/Kg	05/07/18	05/08/18	MTS	
PCB-1260	ND	1	50	ug/Kg	05/07/18	05/08/18	MTS	
PCB-1262	ND	1	50	ug/Kg	05/07/18	05/08/18	MTS	
PCB-1268	ND	1	50	ug/Kg	05/07/18	05/08/18	MTS	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Decachlorobiphenyl DCB (SUR)	*88*		*50-150*					
Method: EPA 8270CM Prep Method: EPA 3545						QCBatchID: QC1190887		
1-Methylnaphthalene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
2-Methylnaphthalene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Acenaphthene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Acenaphthylene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Anthracene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Benz(a)anthracene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Benzo(a)pyrene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Benzo(b)fluoranthene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Benzo(g,h,i)perylene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Benzo(k)fluoranthene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Chrysene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Dibenz(a,h)anthracene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Fluoranthene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Fluorene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Indeno(1,2,3-cd)pyrene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Naphthalene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Phenanthrene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Pyrene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Surrogate	*% Recovery*		*Limits*	*Notes*				
2-Fluorobiphenyl (SUR)	*82*		*30-120*					
Nitrobenzene-d5 (SUR)	*84*		*27-125*					
p-Terphenyl (SUR)	*94*		*33-155*					

DRAFT

Matrix:	Solid	**Client:**	APEX	**Collector:**	Client
Sampled:	04/05/2018 15:15	**Site:**			
Sample #:	**401424-047**	**Client Sample #:**	OW3-7	**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 6010B *NELAC* Prep Method: EPA 3050B						QCBatchID: QC1190894		
Cadmium	ND	1	0.5	mg/Kg	05/08/18	05/08/18	KLN	
Chromium	**3.59**	1	1	mg/Kg	05/08/18	05/08/18	KLN	
Lead	**1.45**	1	1	mg/Kg	05/08/18	05/08/18	KLN	
Nickel	**5.04**	1	1.5	mg/Kg	05/08/18	05/08/18	KLN	
Zinc	**10.5**	1	5	mg/Kg	05/08/18	05/08/18	KLN	
Method: EPA 8015M Prep Method: EPA 3580A						QCBatchID: QC1190932		
TPH Diesel	ND	1	10	mg/Kg	05/09/18	05/09/18	JAR	
TPH Motor Oil	**61**	1	20	mg/Kg	05/09/18	05/09/18	JAR	

Surrogate	*% Recovery*	*Limits*	*Notes*
Triacontane (SUR)	*83*	*50-150*	

Method: EPA 8082 *NELAC* Prep Method: EPA 3545						QCBatchID: QC1190875		
PCB-1016	ND	1	50	ug/Kg	05/07/18	05/08/18	MTS	
PCB-1221	ND	1	50	ug/Kg	05/07/18	05/08/18	MTS	
PCB-1232	ND	1	50	ug/Kg	05/07/18	05/08/18	MTS	
PCB-1242	ND	1	50	ug/Kg	05/07/18	05/08/18	MTS	
PCB-1248	ND	1	50	ug/Kg	05/07/18	05/08/18	MTS	
PCB-1254	ND	1	50	ug/Kg	05/07/18	05/08/18	MTS	
PCB-1260	ND	1	50	ug/Kg	05/07/18	05/08/18	MTS	
PCB-1262	ND	1	50	ug/Kg	05/07/18	05/08/18	MTS	
PCB-1268	ND	1	50	ug/Kg	05/07/18	05/08/18	MTS	

Surrogate	*% Recovery*	*Limits*	*Notes*
Decachlorobiphenyl DCB (SUR)	*96*	*50-150*	

Method: EPA 8270CM Prep Method: EPA 3545						QCBatchID: QC1190887		
1-Methylnaphthalene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
2-Methylnaphthalene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Acenaphthene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Acenaphthylene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Anthracene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Benz(a)anthracene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Benzo(a)pyrene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Benzo(b)fluoranthene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Benzo(g,h,i)perylene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Benzo(k)fluoranthene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Chrysene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Dibenz(a,h)anthracene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Fluoranthene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Fluorene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Indeno(1,2,3-cd)pyrene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Naphthalene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Phenanthrene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Pyrene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4

Surrogate	*% Recovery*	*Limits*	*Notes*
2-Fluorobiphenyl (SUR)	*88*	*30-120*	
Nitrobenzene-d5 (SUR)	*96*	*27-125*	
p-Terphenyl (SUR)	*101*	*33-155*	

DRAFT

Matrix:	Solid	**Client:**	APEX	**Collector:**	Client
Sampled:	04/05/2018 14:10	**Site:**			
Sample #:	**401424-053**	**Client Sample #:**	OW4-6	**Sample Type:**	

Analyte	Result	DF	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 6010B *NELAC* Prep Method: EPA 3050B						QCBatchID: QC1190894		
Cadmium	**0.61**	1	0.5	mg/Kg	05/08/18	05/08/18	KLN	
Chromium	**3.74**	1	1	mg/Kg	05/08/18	05/08/18	KLN	
Lead	**1.45**	1	1	mg/Kg	05/08/18	05/08/18	KLN	
Nickel	**5.36**	1	1.5	mg/Kg	05/08/18	05/08/18	KLN	
Zinc	**10.7**	1	5	mg/Kg	05/08/18	05/08/18	KLN	
Method: EPA 8015M Prep Method: EPA 3580A						QCBatchID: QC1190932		
TPH Diesel	ND	1	10	mg/Kg	05/09/18	05/09/18	SS	
TPH Motor Oil	ND	1	20	mg/Kg	05/09/18	05/09/18	SS	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Triacontane (SUR)	*75*		*50-150*					
Method: EPA 8082 *NELAC* Prep Method: EPA 3545						QCBatchID: QC1190875		
PCB-1016	ND	1	50	ug/Kg	05/07/18	05/08/18	MTS	
PCB-1221	ND	1	50	ug/Kg	05/07/18	05/08/18	MTS	
PCB-1232	ND	1	50	ug/Kg	05/07/18	05/08/18	MTS	
PCB-1242	ND	1	50	ug/Kg	05/07/18	05/08/18	MTS	
PCB-1248	ND	1	50	ug/Kg	05/07/18	05/08/18	MTS	
PCB-1254	ND	1	50	ug/Kg	05/07/18	05/08/18	MTS	
PCB-1260	ND	1	50	ug/Kg	05/07/18	05/08/18	MTS	
PCB-1262	ND	1	50	ug/Kg	05/07/18	05/08/18	MTS	
PCB-1268	ND	1	50	ug/Kg	05/07/18	05/08/18	MTS	
Surrogate	*% Recovery*		*Limits*	*Notes*				
Decachlorobiphenyl DCB (SUR)	*73*		*50-150*					
Method: EPA 8270CM Prep Method: EPA 3545						QCBatchID: QC1190887		
1-Methylnaphthalene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
2-Methylnaphthalene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Acenaphthene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Acenaphthylene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Anthracene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Benz(a)anthracene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Benzo(a)pyrene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Benzo(b)fluoranthene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Benzo(g,h,i)perylene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Benzo(k)fluoranthene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Chrysene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Dibenz(a,h)anthracene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Fluoranthene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Fluorene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Indeno(1,2,3-cd)pyrene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Naphthalene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Phenanthrene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Pyrene	ND	1	10	ug/Kg	05/08/18	05/09/18	DP	T4
Surrogate	*% Recovery*		*Limits*	*Notes*				
2-Fluorobiphenyl (SUR)	*78*		*30-120*					
Nitrobenzene-d5 (SUR)	*87*		*27-125*					
p-Terphenyl (SUR)	*91*		*33-155*					

DRAFT

QCBatchID: QC1190875	**Analyst:** Abanh		**Method:** EPA 8082		
Matrix: Solid	**Analyzed:** 05/07/2018		**Instrument:** SVOA-GC (group)		

Blank Summary

Analyte	Blank Result	Units		RDL	Notes
QC1190875MB1					
PCB-1016	ND	ug/Kg		50	
PCB-1221	ND	ug/Kg		50	
PCB-1232	ND	ug/Kg		50	
PCB-1242	ND	ug/Kg		50	
PCB-1248	ND	ug/Kg		50	
PCB-1254	ND	ug/Kg		50	
PCB-1260	ND	ug/Kg		50	
PCB-1262	ND	ug/Kg		50	
PCB-1268	ND	ug/Kg		50	

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount LCS	Spike Amount LCSD	Spike Result LCS	Spike Result LCSD	Units	Recoveries LCS	Recoveries LCSD	RPD	Limits %Rec	Limits RPD	Notes
QC1190875LCS1											
PCB-1016	500		430		ug/Kg	86			70-130		
PCB-1260	500		400		ug/Kg	80			70-130		

Matrix Spike/Matrix Spike Duplicate Summary

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1190875MS1, QC1190875MSD1												**Source: 401424-036**
PCB-1016	ND	500	500	500	420	ug/Kg	100	84	17.4	70-130	20	
PCB-1260	ND	500	500	470	400	ug/Kg	94	80	16.1	70-130	20	

DRAFT

QCBatchID: QC1190887	**Analyst:** Abanh	**Method:** EPA 8270CM	
Matrix: Solid	**Analyzed:** 05/08/2018	**Instrument:** SVOA-MS (group)	

Blank Summary

Analyte	Blank Result	Units		RDL	Notes
QC1190887MB1					
1-Methylnaphthalene	ND	ug/Kg		10	
2-Methylnaphthalene	ND	ug/Kg		10	
Acenaphthene	ND	ug/Kg		10	
Acenaphthylene	ND	ug/Kg		10	
Anthracene	ND	ug/Kg		10	
Benz(a)anthracene	ND	ug/Kg		10	
Benzo(a)pyrene	ND	ug/Kg		10	
Benzo(b)fluoranthene	ND	ug/Kg		10	
Benzo(g,h,i)perylene	ND	ug/Kg		10	
Benzo(k)fluoranthene	ND	ug/Kg		10	
Chrysene	ND	ug/Kg		10	
Dibenz(a,h)anthracene	ND	ug/Kg		10	
Fluoranthene	ND	ug/Kg		10	
Fluorene	ND	ug/Kg		10	
Indeno(1,2,3-cd)pyrene	ND	ug/Kg		10	
Naphthalene	ND	ug/Kg		10	
Phenanthrene	ND	ug/Kg		10	
Pyrene	ND	ug/Kg		10	

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount LCS	Spike Amount LCSD	Spike Result LCS	Spike Result LCSD	Units	Recoveries LCS	Recoveries LCSD	RPD	Limits %Rec	Limits RPD	Notes
QC1190887LCS1											
1-Methylnaphthalene	50		41		ug/Kg	82			70-130		
2-Methylnaphthalene	50		51		ug/Kg	102			70-130		
Acenaphthene	50		50		ug/Kg	100			70-130		
Acenaphthylene	50		46		ug/Kg	92			70-130		
Anthracene	50		54		ug/Kg	108			70-130		
Benz(a)anthracene	50		52		ug/Kg	104			70-130		
Benzo(a)pyrene	50		55		ug/Kg	110			70-130		
Benzo(b)fluoranthene	50		58		ug/Kg	116			70-130		
Benzo(g,h,i)perylene	50		57		ug/Kg	114			70-130		
Benzo(k)fluoranthene	50		56		ug/Kg	112			70-130		
Chrysene	50		54		ug/Kg	108			70-130		
Dibenz(a,h)anthracene	50		59		ug/Kg	118			70-130		
Fluoranthene	50		54		ug/Kg	108			70-130		
Fluorene	50		52		ug/Kg	104			70-130		
Indeno(1,2,3-cd)pyrene	50		60		ug/Kg	120			70-130		
Naphthalene	50		51		ug/Kg	102			70-130		
Phenanthrene	50		55		ug/Kg	110			70-130		
Pyrene	50		55		ug/Kg	110			70-130		

Matrix Spike/Matrix Spike Duplicate Summary

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1190887MS1, QC1190887MSD1												**Source: 402381-001**
1-Methylnaphthalene	ND	50	50	43	41	ug/Kg	86	82	4.8	70-130	35	
2-Methylnaphthalene	ND	50	50	53	51	ug/Kg	106	102	3.8	70-130	35	
Acenaphthene	ND	50	50	53	50	ug/Kg	106	100	5.8	70-130	35	
Acenaphthylene	ND	50	50	51	48	ug/Kg	102	96	6.1	70-130	35	
Anthracene	ND	50	50	59	58	ug/Kg	118	116	1.7	70-130	35	

DRAFT

QCBatchID: QC1190887 **Analyst:** Abanh **Method:** EPA 8270CM

Matrix: Solid **Analyzed:** 05/08/2018 **Instrument:** SVOA-MS (group)

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1190887MS1, QC1190887MSD1												**Source: 402381-001**
Benz(a)anthracene	ND	50	50	64	65	ug/Kg	128	130	1.6	70-130	35	
Benzo(a)pyrene	ND	50	50	64	66	ug/Kg	128	132	3.1	70-130	35	
Benzo(b)fluoranthene	ND	50	50	65	67	ug/Kg	130	134	3.0	70-130	35	
Benzo(g,h,i)perylene	ND	50	50	56	55	ug/Kg	112	110	1.8	70-130	35	
Benzo(k)fluoranthene	ND	50	50	63	63	ug/Kg	126	126	0.0	70-130	35	
Chrysene	ND	50	50	55	60	ug/Kg	110	120	8.7	70-130	35	
Dibenz(a,h)anthracene	ND	50	50	58	58	ug/Kg	116	116	0.0	70-130	35	
Fluoranthene	1.0	50	50	64	63	ug/Kg	126	124	1.6	70-130	35	
Fluorene	ND	50	50	56	54	ug/Kg	112	108	3.6	70-130	35	
Indeno(1,2,3-cd)pyrene	ND	50	50	61	60	ug/Kg	122	120	1.7	70-130	35	
Naphthalene	ND	50	50	51	49	ug/Kg	102	98	4.0	70-130	35	
Phenanthrene	2.4	50	50	60	58	ug/Kg	116	112	3.4	70-130	35	
Pyrene	1.0	50	50	62	61	ug/Kg	122	120	1.6	70-130	35	

DRAFT

QCBatchID: QC1190894	Analyst: dswafford	Method: EPA 6010B
Matrix: Solid	Analyzed: 05/08/2018	Instrument: AAICP (group)

Blank Summary

Analyte	Blank Result	Units		RDL	Notes
QC1190894MB1					
Arsenic	ND	mg/Kg		1	
Cadmium	ND	mg/Kg		0.5	
Chromium	ND	mg/Kg		1	
Iron	ND	mg/Kg		5	
Lead	ND	mg/Kg		1	
Nickel	ND	mg/Kg		1.5	
Zinc	ND	mg/Kg		5	

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount LCS	Spike Amount LCSD	Spike Result LCS	Spike Result LCSD	Units	Recoveries LCS	Recoveries LCSD	RPD	Limits %Rec	Limits RPD	Notes
QC1190894LCS1											
Arsenic	100		90.6		mg/Kg	91			80-120		
Cadmium	100		91.7		mg/Kg	92			80-120		
Chromium	100		92.6		mg/Kg	93			80-120		
Lead	100		91.2		mg/Kg	91			80-120		
Nickel	100		94.2		mg/Kg	94			80-120		
Zinc	100		90.4		mg/Kg	90			80-120		

Matrix Spike/Matrix Spike Duplicate Summary

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1190894MS1, QC1190894MSD1												**Source: 401424-036**
Arsenic	8.28	100	100	92.8	97.5	mg/Kg	85	89	4.9	75-125	20	
Cadmium	1.65	100	100	91.9	88.3	mg/Kg	90	87	4.0	75-125	20	
Chromium	8.85	100	100	103	101	mg/Kg	94	92	2.0	75-125	20	
Lead	1.86	100	100	84.4	87.9	mg/Kg	83	86	4.1	75-125	20	
Nickel	11.3	100	100	101	97.9	mg/Kg	90	87	3.1	75-125	20	
Zinc	17.1	100	100	109	103	mg/Kg	92	86	5.7	75-125	20	

DRAFT

QCBatchID: QC1190932	Analyst: Jarriaga	Method: EPA 8015M
Matrix: Solid	Analyzed: 05/09/2018	Instrument: SVOA-GC (group)

Blank Summary

Analyte	Blank Result	Units		RDL	Notes	
QC1190932MB1						
TPH (C10 to C28)	ND	mg/Kg		10		
TPH Diesel	ND	mg/Kg		10		
TPH Motor Oil	ND	mg/Kg		20		

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount LCS	Spike Amount LCSD	Spike Result LCS	Spike Result LCSD	Units	Recoveries LCS	Recoveries LCSD	RPD	Limits %Rec	Limits RPD	Notes
QC1190932LCS1											
TPH (C10 to C28)	250		230		mg/Kg	92			70-130		

Matrix Spike/Matrix Spike Duplicate Summary

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1190932MS1, QC1190932MSD1												**Source: 401424-036**
TPH (C10 to C28)	ND	250	250	250	280	mg/Kg	100	112	11.3	70-130	20	

DRAFT

Data Qualifiers and Definitions

Qualifiers

A	See Report Comments.
B	Analyte was present in an associated method blank.
B1	Analyte was present in a sample and associated method blank greater than MDL but less than RDL.
BQ1	No valid test replicates. Sample Toxicity is possible. Best result was reported.
BQ2	No valid test replicates.
BQ3	No valid test replicates. Final DO is less than 1.0 mg/L. Result may be greater.
BQ4	Minor Dissolved Oxygen loss was observed in the blank water check, however, the LCS was within criteria, validating the batch.
C	Possible laboratory contamination.
D	RPD was not within control limits. The sample data was reported without further clarification.
D1	Lesser amount of sample was used due to insufficient amount of sample supplied.
D2	Reporting limit is elevated due to sample matrix. Target analyte was not detected above the elevated reporting limit.
D3	Insufficient sample was supplied for TCLP. Client was notified. TCLP was performed per the Client's instructions.
DW	Sample result is calculated on a dry weigh basis.
E	Concentration is estimated because it exceeds the quantification limits of the method.
I	The sample was read outside of the method required incubation period.
J	Reported value is estimated
L	The laboratory control sample (LCS) or laboratory control sample duplicate (LCSD) was out of control limits. Associated sample data was reported with qualifier.
M	The matrix spike (MS) or matrix spike duplicate (MSD) was not within control limits due to matrix interference. The associated LCS and/or LCSD was within control limits and the sample data was reported without further clarification.
M1	The matrix spike (MS) or matrix spike duplicate (MSD) is not within control limits due to matrix interference.
M2	The matrix spike (MS) or matrix spike duplicate (MSD) was not within control limits. The associated LCS and/or LCSD was not within control limits. Sample result is estimated.
N1	Sample chromatography does not match the specified TPH standard pattern.
NC	The analyte concentration in the sample exceeded the spike level by a factor of four or greater, spike recovery and limits do not apply.
P	Sample was received without proper preservation according to EPA guidelines.
P1	Temperature of sample storage refrigerator was out of acceptance limits.
P2	The sample was preserved within 24 hours of collection in accordance with EPA 218.6.
P3	Per Client request, sample was composited for volatile analysis. Sample compositing for volatile analysis is not recommended due to potential loss of target analytes. Results may be biased low.
Q1	Analyte Calibration Verification exceeds criteria. The result is estimated.
Q2	Analyte calibration was not verified and the result was estimated.
Q3	Analyte initial calibration was not available or exceeds criteria. The result was estimated.
S	The surrogate recovery was out of control limits due to matrix interference. The associated method blank surrogate recovery was within control limits and the sample data was reported without further clarification.
S1	The associated surrogate recovery was out of control limits; result is estimated.
S2	The surrogate was diluted out due to the presence of high concentrations of target and/or non-target compounds. Surrogate recoveries in the associated batch QC met recovery criteria.
S3	Internal Standard did not meet recovery limits. Analyte concentration is estimated.
T	Sample was extracted/analyzed past the holding time.
T1	Reanalysis was reported past hold time due to failing replicates in the original analysis (BOD only).
T2	Sample was analyzed ASAP but received and analyzed past the 15 minute holding time.
T3	Sample received and analyzed out of hold time per client's request.
T4	Sample was analyzed out of hold time per client's request.
T5	Reanalysis was reported past hold time. The original analysis was within hold time, but not reportable.
T6	Hold time is indeterminable due to unspecified sampling time.
T7	Sample was analyzed past hold time due to insufficient time remaining at time of receipt.

Definitions

DF	Dilution Factor
MDL	Method Detection Limit. Result is reported ND when it is less than or equal to MDL.
ND	Analyte was not detected or was less than the detection limit.
NR	Not Reported. See Report Comments.
RDL	Reporting Detection Limit
TIC	Tentatively Identified Compounds

DRAFT

Appendix G: Noise Monitoring and Modeling

Appendices

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LOCAL REGULATIONS AND STANDARDS

NOISE

Studies have identified noise as an environmental pollutant that can have substantial and permanent impacts on human health and general well-being. Not only is noise a health hazard, excessive noise can be a source of annoyance, tension, and discomfort that disrupts everyday activities. Brea aims to substantially reduce noise and its impacts within the urban environment, with a focus on protecting residential neighborhoods, schools, and similar sensitive uses.

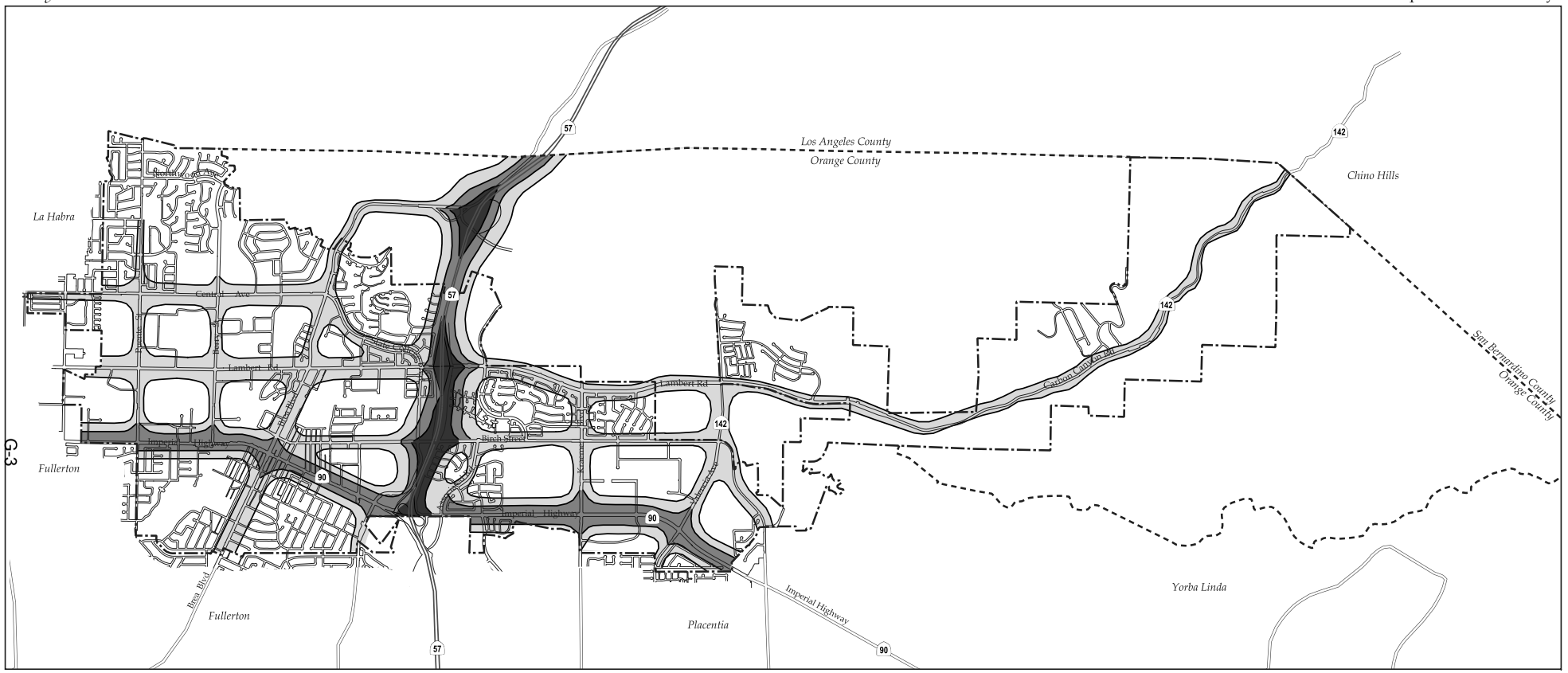
Context

In Brea, street and freeway traffic represent the primary noise sources. Industrial and commercial activity present concerns where adjacent to residential neighborhoods. In addition, mechanical equipment, playgrounds, leaf blowers, and construction equipment are examples of random noise sources that can contribute to neighborhood noise.

Figure PS-5 displays a composite picture of average noise levels in Brea in 2001. As Figure PS-5 illustrates, the loudest noise levels occur along State Highway 57, Imperial Highway, Brea Boulevard, and Valencia Avenue, where truck traffic associated with the Olinda Alpha landfill lumbers past homes and places of business. Lambert Road also experiences loud noise levels due to access to State Highway 57.

Noise and Land Use Compatibility Guidelines

Noise generally is defined as unwanted or intrusive sound. Because noise consists of pitch, loudness, and duration, describing noise with a single unit of measure presents a challenge. The A-weighted decibel scale, or dB(A), has been developed to describe the loudness of a sound or sound environment based on the sensitivity of the human ear. A sound level meter that measures A-weighted decibels has an electrical circuit that allows the meter to have the same sensitivity to sound at different frequencies as the average human ear. Table PS-3 indicates criteria the State has established to reduce adverse noise effects on human health.



Source: Weiland Associates, 2001.

Legend

- City Boundary
- Sphere of Influence

Community Noise Equivalent Level (CNEL) Contours

- Less than 60 CNEL
- 60 to 65 CNEL
- 65 to 70 CNEL
- Greater than 70 CNEL

N W E S City of Brea General Plan

0 3,000 6,000 9,000 12,000 Feet

0 0.5 1 1.5 2 Miles

BREA GENERAL PLAN

Figure PS-5
Noise Contours (2001)

Table PS-3
State Criteria for Minimizing Adverse Noise Effects on Humans

Objective	dB(A) Range
Prevent Hearing Loss	75-80
Prevent Physiological Effects (Other than hearing loss)	65-75
Prevent Speech Interference	50-60
Address People's Subjective Preference for Noise Control	45-50
Prevent Sleep Interruption	35-45

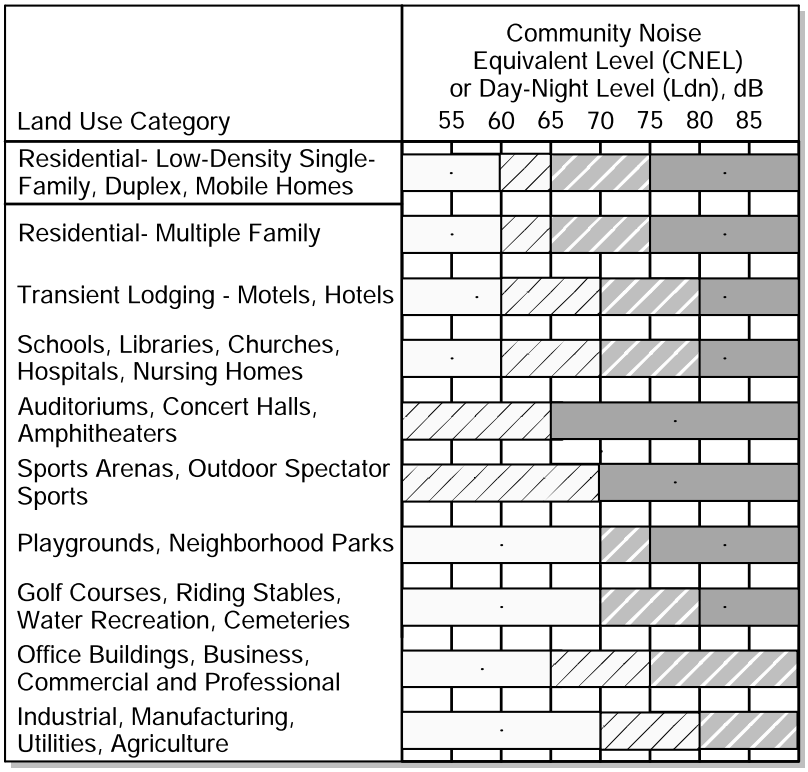
Source: California General Plan Guidelines, 2000.

The dB(A) descriptor only reports noise from a single source or combination of sources at a point in time. To allow a more comprehensive description of a noise environment, federal and State agencies have established noise and land use compatibility guidelines that use averaging approaches to noise measurement. Two measurement scales commonly used in California are the Community Noise Equivalent Level (CNEL) and the day-night level (Ldn). To account for increased human sensitivity at night, the CNEL level includes a 5-decibel penalty on noise during the 7:00 A.M. to 10:00 P.M. time period and a 10-decibel penalty on noise during the 10:00 P.M. to 7:00 A.M. time period. The Ldn level includes only the 10 decibel weighting for late-night noise. These values are nearly identical for all but unusual noise sources.

The City will use land use compatibility standards when planning and making development decisions in order to ensure that noise producers do not adversely affect sensitive receptors.

The City's primary goal with regard to community noise is to minimize the exposure of residents to unhealthful or excessive noise levels to the extent possible. To this end, the noise/land use compatibility guidelines in Figure PS-6, based on cumulative noise criteria for outdoor noise, are used to review development proposals and to identify and mitigation measures necessary to avoid or minimize impacts, including traffic noise impacts, a new use may have on established uses.

Figure PS-6
Noise/Land Use Compatibility



Nature of the noise environment where the CNEL or Ldn level is:

Below 55 dB
Relatively quiet suburban or urban areas, no arterial streets within 1 block, no freeways within 1/4 mile.

55-65 dB
Most somewhat noisy urban areas, near but not directly adjacent to high volumes of traffic.

65-75 dB
Very noisy urban areas near arterials, freeways or airports.

75+ dB
Extremely noisy urban areas adjacent to freeways or under airport traffic patterns. Hearing damage with constant exposure outdoors.

Normally Acceptable
Specified land use is satisfactory, based on the assumption that any buildings are of normal conventional construction, without any special noise insulation requirements

Conditionally Acceptable
New construction or development should be undertaken only after a detailed analysis of noise reduction requirements is made and needed noise insulation features included in design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.

Normally Unacceptable
New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of noise reduction requirements must be made and needed noise insulation features included in design.

Clearly Unacceptable
New construction or development should generally not be undertaken.

The Community Noise Equivalent Level (CNEL) and Day-Night Noise Level (Ldn) are measures of the 24-hour noise environment. They represent the constant A-weighted noise level that would be measured if all the sound energy received over the day were averaged. In order to account for the greater sensitivity of people to noise at night, the CNEL weighting includes a 5-decibel penalty on noise between 7:00 p.m. and 10:00 p.m. and a 10-decibel penalty on noise between 10:00 p.m. and 7:00 a.m. of the next day. The Ldn includes only the 10-decibel weighting for late-night noise events. For practical purposes, the two measures are equivalent for typical urban noise environments.

Noise Contours and Noise Impact Areas

The use of noise contours based on the major noise sources can describe the noise environment for the community. Noise contours outline areas of equal noise exposure. Future noise contours have been estimated using information about existing and projected land use development and transportation activity.

The projected noise contours and noise impact areas for Brea are displayed in Figure PS-7. These contours will serve as a guide for land use and development decisions. Contours of 60 dB(A) or greater define noise impact areas. An acoustical analysis must be prepared when noise sensitive land uses are proposed within noise impact areas. The analysis must show that the project is designed to attenuate noise to meet the City's noise standards in order to receive approval. If the project design does not meet the noise standards, mitigation can be recommended in the analysis. If the analysis demonstrates that the noise standards can be met by implementing the mitigation measures, the project can be approved conditioned upon implementation of the mitigation measures.

Transportation Related Noise

Transportation activity is the primary source of noise in Brea. The three major sources of transportation related noise are:

- Traffic on the Orange Freeway (SR-57)
- Commercial truck traffic associated with the Olinda Alpha landfill on Valencia Avenue and Imperial Highway
- Automobile traffic on Brea Boulevard, Brea Canyon Road, Central Avenue, and Lambert Road

Residential neighborhoods bordering the Orange Freeway are subject to loud noise levels. Properties directly adjacent to the freeway can experience decibels as high as 70 to 75 dB(A). Sound attenuation walls, landscaped buffers, and dirt mounds all help to reduce the sound intensity of the freeway. Figure PS-7 illustrates the projected noise contours along the freeway.

Commercial trucks associated with the Olinda Alpha landfill contribute to excessive noise levels via the Orange Freeway, Imperial Highway, and Valencia Avenue to connect with the landfill. Commercial trucks are not permitted to access Valencia Avenue via Lambert Road, minimizing some of the noise impacts to adjacent residential neighborhoods. Olinda Alpha is slated to close in the year 2013; however, the County of Orange is investigating extending the life of the landfill much further.

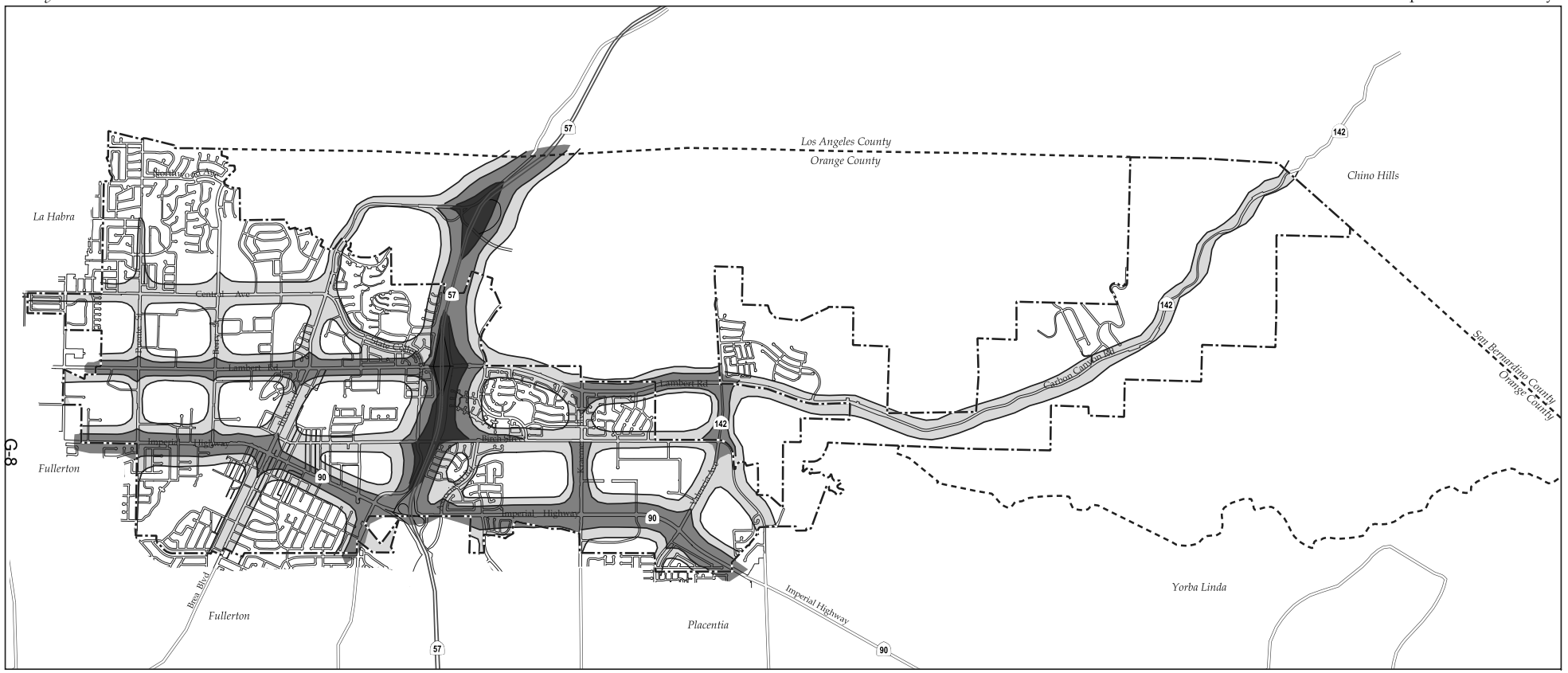
New residential development has been recently constructed at the northeast corner of Valencia Avenue and Carbon Canyon Road just south of the Olinda Alpha landfill entrance. Dense planting of deciduous and evergreen trees as well as a sound attenuation wall were set within the landscaped area to minimize the impacts to residential properties directly abutting Valencia Avenue.

Proposed residential land uses have also been designated for both sides of Valencia Avenue south of Lambert Road/Carbon Canyon Road. Residential, school, and park uses are proposed for the Hartley Research Center. Careful planning and mitigation within these areas will protect these sensitive uses from excessive noise levels.

Noise levels along Brea Boulevard, Brea Canyon Road, Central Avenue, and Lambert Road are above average and can impact sensitive uses adjacent to these streets.

Traffic noise depends primarily on the speed of traffic and the percentage of truck traffic. The primary source of noise from automobiles is high-frequency tire noise, which increases with speed. In addition, trucks and older automobiles produce engine and exhaust noise.

The most efficient and effective means of controlling noise from transportation systems is to reduce noise at the source. However, the City has little direct control over noise produced by transportation sources because State noise regulations preempt local regulations. Because the City cannot control noise at the source, City noise programs focus on reducing the impact of transportation noise at reception sites. During the planning stages of the development process, potential impacts from transportation noise will be identified and mitigation measures will be required as needed to meet City noise standards.



Source: Weiland Associates, 2001.

Legend

- City Boundary
- Sphere of Influence

Community Noise Equivalent Level (CNEL) Contours

- Less than 60 CNEL
- 60 to 65 CNEL
- 65 to 70 CNEL
- Greater than 70 CNEL

N, W, E, S — City of Brea General Plan

0 3,000 6,000 9,000 12,000 Feet

0 0.5 1 1.5 2 Miles

BREA GENERAL PLAN

Figure PS-6
Future Noise Contours

Sound attenuation walls and limits on speed help to shield residential neighborhoods from automobile noise on Imperial Highway.

Non-Transportation Related Noise

When reviewing a proposed industrial, commercial, or public project, noise generation and potential impacts to surrounding development are considered in accordance with CEQA. Specific attention should be given to non-residential proposals adjacent to residential neighborhoods. An acoustical analysis is required for projects that will generate noise potentially affecting sensitive receptors. Where significant impacts are identified, mitigation measures are required. Common mitigation measures that could be applied when reviewing projects include acoustically treated and quiet design: 1) furnaces, 2) fans, 3) motors, 4) compressors, and 5) valves and pumps. The City may also require limited delivery hours and hours of operation to minimize impacts on adjacent residential users or other sensitive receptors.

Goals and Policies

Certain areas of Brea are subject to high levels of noise. This in turn can reduce the quality of life within these neighborhoods. Consideration of noise sources in the planning process and identification of who that noise impacts is an effective method of minimizing the impacts of noise on residents. Areas already impacted by noise can explore different noise attenuation and rehabilitative improvements.

Goal PS-9	Minimize the impact of point source noise and ambient noise levels throughout the community.

Policy PS-9.1 Evaluate the need to require acoustical studies for development proposals that address both direct and indirect, particularly traffic, noise impacts, and require such studies, with appropriate mitigation included, as warranted.

Policy PS-9.2 Ensure that the noise standards set forth in the Municipal Code reflect standards most appropriate for Brea.

Policy PS-9.3 Ensure that acceptable noise levels are maintained near schools, hospitals, convalescent homes, and other noise sensitive areas in accordance with the City's Municipal Code and noise standards contained in the General Plan.

Policy PS-9.4 Employ creative methods of reducing noise pollution in the City.

Policy PS-9.5 Avoid placing high-noise activity centers near residential areas.

Goal PS-2	Minimize the impacts of transportation-related noise.

Policy PS-2.1 Reduce transportation noise by imposing traffic restrictions where necessary.

Policy PS-2.2 Work with the counties of Orange and Los Angeles to include noise mitigation measures in the design of new roadway projects.

Goal PS-3	Minimize noise impacts from sources other than transportation.

Policy PS-3.1 Require the inclusion of noise mitigation measures, techniques, and design features in the planning, design, and construction of future development and redevelopment projects.

Policy PS-3.2 Require that mixed-use structures be designed to prevent transfer of noise and vibration from commercial/retail to residential use.

Policy PS-3.3 Minimize stationary noise sources and noise emanating from construction activities and special events.

Policy PS-3.4 Require that new non-residential development plan delivery areas away from existing residential areas.

Policy PS-3.5 Continue active enforcement to limit commercial and industrial delivery hours adjoining residential areas.

Implementation Guide

See Section XXIII of the Implementation Guide for action programs.

Print

Brea City Code

CHAPTER 8.20: NOISE CONTROL

Section

8.20.010 Declaration of policy

8.20.020 Definitions

8.20.030 Noise level measurement criteria

8.20.040 Designated noise zone

8.20.050 Exterior noise standards

8.20.060 Interior noise standards

8.20.070 Special provisions

8.20.080 Motor vehicle racing

8.20.090 Schools, hospitals and churches

8.20.100 Air conditioning; refrigeration; pool filters and fans

8.20.110 Noise level measurement

8.20.120 Manner of enforcement

§ 8.20.010 DECLARATION OF POLICY.

A. In order to control unnecessary, excessive and annoying sounds emanating from areas of the city, it is hereby declared to be the policy of the city to prohibit such sounds generated from all sources as specified in this chapter.

B. It is determined that certain sound levels are detrimental to the public health, welfare and safety, and contrary to the public interest.

('61 Code, § 7B.1) (Ord. 812, passed - -)

§ 8.20.020 DEFINITIONS.

For the purpose of this chapter, the following definitions shall apply unless the context clearly indicates or requires a different meaning.

AMBIENT NOISE LEVEL. The all-encompassing noise level associated with a given environment, being a composite of sounds from all sources, excluding the alleged offensive noise, at the location and approximate time at which a comparison with the alleged offensive noise is to be made.

CUMULATIVE PERIOD. An additive period of time composed of individual time segments which may be continuous or interrupted.

DECIBEL (dB). A unit which denotes the ratio between two (2) quantities which are proportional to power: the number of decibels corresponding to the ratio or two (2) amounts of power is ten (10) times the logarithm to the base ten (10) of this ratio.

DWELLING UNIT. A single unit providing complete, independent living facilities for one (1) or more persons including permanent provisions for living, sleeping, eating, cooking and sanitation.

EMERGENCY MACHINERY, VEHICLE, OR WORK. Any machinery, vehicle or work used, employed or performed in an effort to protect, provide or restore safe conditions in the community or for the citizenry, or work by private or public utilities when restoring utility service.

FIXED NOISE SOURCE. A stationary device which creates sounds while fixed or motionless, including but not limited to industrial and commercial machinery and equipment, pumps, fans, compressors, generators, air conditioners and refrigeration equipment.

GRADING. Any excavating or filling of earth material, or any combination thereof, conducted at a site to prepare said site for construction or other improvements thereon.

IMPACT NOISE. The noise produced by the collision of one mass in motion with a second mass which may be either in motion or at rest.

MOBILE NOISE SOURCE. Any noise source other than a fixed noise source.

NOISE LEVEL. The “A” weighted sound pressure level in decibels obtained by using a sound level meter at slow response with a reference pressure of twenty (20) micronewtons per square meter. The unit of measurement shall be designated as dB(A).

PERSON. A person, firm, association, co-partnership, joint venture, corporation or any entity, public or private in nature.

RESIDENTIAL PROPERTY. A parcel of real property which is developed and used either in part or in whole for residential purposes, other than transient uses such as hotels and motels.

SIMPLE TONE NOISE. A noise characterized by a predominant frequency or frequencies so that other frequencies cannot be readily distinguished.

SOUND LEVEL METER. An instrument meeting American National Standard Institute's Standard S1.4-1971 for Type 1 or Type 2 sound level meters or an instrument and the associated recording and analyzing equipment which will provide equivalent data.

SOUND PRESSURE LEVEL OF A SOUND, IN DECIBELS. Twenty (20) times the logarithm to the base ten (10) of the ratio of the pressure of the sound to a reference pressure, which reference pressure shall be explicitly stated.

('61 Code, § 7B.2) (Ord. 812, passed - -)

§ 8.20.030 NOISE LEVEL MEASUREMENT CRITERIA.

Any noise level measurements made pursuant to the provisions of this chapter shall be performed using a sound level meter as defined in § 8.20.020.

('61 Code, § 7B.3) (Ord. 812, passed - -)

§ 8.20.040 DESIGNATED NOISE ZONE.

The entire territory of the city is hereby designated as “Noise Zone 1.”

('61 Code, § 7B.4) (Ord. 812, passed - -)

§ 8.20.050 EXTERIOR NOISE STANDARDS.

A. The following noise standards, unless otherwise specifically indicated, shall apply to all residential property within a designated noise zone:

NOISE STANDARDS

Noise Zone	*Noise Level*	*Time Period*
1	55 dB(A)	7:00 a.m. - 10:00 p.m.
1	50 dB(A)	10:00 p.m. - 7:00 a.m.

In the event the alleged offensive noise consists entirely of impact noise, simple tone noise, speech, music, or any combination thereof, each of the above noise levels shall be reduced by five (5) dB(A).

B. It shall be unlawful for any person at any location within the city to create any noise on property owned, leased, occupied, or otherwise controlled by such person, when the foregoing causes the noise level, when measured on any other residential property, to exceed:

1. The noise standard for a cumulative period of more than 30 minutes in any hour; or

2. The noise standard plus five (5) dB(A) for a cumulative period of more than 15 minutes in any hour; or

3. The noise standard plus ten (10) dB(A) for a cumulative period of more than five (5) minutes in any hour; or

4. The noise standards plus fifteen (15) dB(A) for a cumulative period of more than one (1) minute in any hour; or

5. The noise standard plus twenty (20) dB(A) for any period of time.

C. In the event the ambient noise level exceeds any of the first four (4) noise limit categories above, the cumulative period applicable to said category shall be increased to reflect said ambient noise level. In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.

('61 Code, § 7B.5) (Ord. 812, passed - -)

§ 8.20.060 INTERIOR NOISE STANDARDS.

A. The following interior noise standards, unless otherwise specifically indicated, shall apply to all residential property within a designated noise zone:

INTERIOR NOISE STANDARDS

Noise Zone	*Noise Level*	*Time Period*
1	55 dB(A)	7:00 a.m. - 10:00 p.m.
1	45 dB(A)	10:00 p.m. - 7:00 a.m.

In the event the alleged offensive noise consists entirely of impact noise, simple tone noise, speech, music, or any combination thereof, each of the above noise levels shall be reduced by five (5) dB(A).

B. It shall be unlawful for any person at any location within the city to create any noise, or to allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person, when the foregoing causes the noise level, when measured on any other residential property, to exceed:

1. The interior noise standard for a cumulative period of more than five (5) minutes in any hour; or

2. The interior noise standard plus five (5) dB(A) for a cumulative period of more than one (1) minute in any hour; or

3. The interior noise standard plus ten (10) dB(A) for any period of time.

C. In the event the ambient noise level exceeds any of the first two (2) noise limit categories above, the cumulative period applicable to said category shall be increased to reflect said ambient noise level. In the event the ambient noise level exceeds the third noise limit category the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.

('61 Code, § 7B.6) (Ord. 812, passed - -)

§ 8.20.070 SPECIAL PROVISIONS.

The following activities shall be exempted from the provisions of this chapter:

A. Activities conducted on the grounds of any public nursery, elementary, intermediate or secondary school or college.

B. Outdoor gatherings, public dances and shows, provided said events are conducted pursuant to a permit as required by this code.

C. Activities conducted on any park or playground, provided such park or playground is owned and operated by a public entity.

D. Any mechanical device, apparatus or equipment used, related to or connected with emergency machinery, vehicle or work.

E. Noise sources associated with construction, repair, remodeling, or grading of any real property, provided said activities do not take place between the hours of 7:00 p.m. and 7:00 a.m. on weekdays, including Saturday, or at any time on Sunday or a federal holiday.

F. All mechanical devices, apparatus or equipment which are utilized for the protection or salvage of agricultural crops during periods of potential or actual frost damage or other adverse weather conditions.

G. Mobile noise sources associated with agricultural operations; provided such operations do not take place between the hours of 7:00 p.m. and 7:00 a.m. on weekdays, including Saturday, or at any time on Sunday or a federal holiday.

H. Mobile noise sources associated with agricultural pest control through pesticide application, provided that the application is made in accordance with restricted material permits issued by or regulations enforced by the Agricultural Commissioner.

I. Noise sources, associated with the maintenance of real property, provided said activities take place between 7:00 a.m. and 7:00 p.m. on any day.

J. Any activity to the extent regulation thereof has been preempted by state or federal law.

('61 Code, § 7B.7) (Ord. 812, passed - -)

§ 8.20.080 MOTOR VEHICLE RACING.

It shall be unlawful to conduct motor vehicle racing, testing, timing or similar noise-producing activities at raceways, speedways, off-road vehicle courses, drag strips or other similar places, including, but not limited to, the operation of midget race cars, drag cars, motorcycles, off-road vehicles, and specialty automobiles, between the hours of 11:30 p.m. and 7:00 a.m.

('61 Code, § 7B.8) (Ord. 812, passed - -)

§ 8.20.090 SCHOOLS, HOSPITALS AND CHURCHES.

It shall be unlawful for any person to create any noise which causes the noise level at any school, hospital or church while same is in use to exceed the noise limits as specified in § 8.20.050 proscribed for the assigned noise zone in which the school, hospital or church is located, or which noise level unreasonably interferes with the use of such institutions or which unreasonably disturbs or annoys patients in the hospital, provided conspicuous signs are displayed in three (3) separate locations within one-tenth of a mile of the institution indicating the presence of a school, church or hospital.

('61 Code, § 7B.9) (Ord. 812, passed - -)

§ 8.20.100 AIR CONDITIONING; REFRIGERATION; POOL FILTERS AND FANS.

During the five (5) year period following the effective date of this chapter, the noise standards enumerated in §§ 8.20.050 and 8.20.060 shall be increased eight (8) dB(A) where the alleged offensive noise source is an air conditioning, or refrigeration system, fan, or swimming pool filter, or associated equipment which was installed prior to the effective date of this chapter.

('61 Code, § 7B.10) (Ord. 812, passed - -)

§ 8.20.110 NOISE LEVEL MEASUREMENT.

The location selected for measuring exterior noise levels shall be at any point on the affected property. Interior noise measurements shall be made within the affected dwelling unit. The measurement shall be made at a point at least four (4) feet from the wall, ceiling or floor nearest the alleged offensive noise source and may be made with the windows of the affected unit open.

('61 Code, § 7B.11) (Ord. 812, passed - -)

§ 8.20.120 MANNER OF ENFORCEMENT.

A. The Police Department, the Code Enforcement Officer and their duly authorized representatives are directed to enforce the provisions of this chapter.

B. No person shall interfere with, oppose or resist any authorized person charged with the enforcement of this chapter while such person is engaged in the performance of his or her duty.

('61 Code, § 7B.12) (Ord. 812, passed - -)

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§ 20.20.040 VIBRATION.

Every use shall be so operated that the ground vibration inherently and recurrently generated does not cause a displacement of the earth greater than .003 of one (1) inch as measured at the property line of the subject use.

(Ord. 425, passed 10-14-68)

CONSTRUCTION NOISE MODELING

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/26/2021
Case Description: Brea-03.3

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Architectural Coating	Residential	60.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	50.0	0.0

Results

Equipment	Calculated (dBA) Lmax	L10	Noise Limits (dBA) Day Lmax	L10	Evening Lmax	L10	Night Lmax	L10	Noise Limit Exceedance (dBA) Day Lmax	L10	Evening Lmax	L10	Night Lmax	L10
Compressor (air)	77.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	77.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/26/2021
Case Description: Brea 03.3

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Asphalt Demoliltion	Residential	65.0	60.0	55.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Tractor	No	40	84.0		50.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Tractor	84.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	84.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/26/2021
Case Description: Brea 03.3

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Building Demo	Residential	65.0	60.0	55.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	50.0	0.0
Tractor	No	40	84.0		50.0	0.0
Front End Loader	No	40		79.1	50.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA)				Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	84.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	79.1	75.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	84.0	82.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/26/2021
Case Description: Brea 03.3

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Finish/Landscaping	Residential	65.0	60.0	55.0

Equipment

Description	Impact Device	Spec Usage (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)
Paver	No	50	77.2	50.0		0.0
Roller	No	20	80.0	50.0		0.0
Front End Loader	No	40	79.1	50.0		0.0

Results

	Calculated (dBA)		Noise Limits (dBA)				Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver	77.2	74.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	80.0	73.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	79.1	75.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	80.0	79.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/26/2021
Case Description: Brea 03.3

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Paving	Residential	65.0	60.0	55.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	50.0	0.0
Roller	No	20		80.0	50.0	0.0
Front End Loader	No	40		79.1	50.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA)				Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver	77.2	74.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	80.0	73.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	79.1	75.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	80.0	79.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/26/2021
Case Description: Brea 03.3

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Retail/Residential Building Construction	Residential	65.0	60.0	55.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Tractor	No	40	84.0		50.0	0.0
Chain Saw	No	20		83.7	50.0	0.0
Crane	No	16		80.6	50.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA)				Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Tractor	84.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chain Saw	83.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	80.6	72.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	84.0	82.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/26/2021
Case Description: Brea 03.3

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Site Preparation	Residential	65.0	60.0	55.0

Equipment

Description	Impact Device	Spec Usage (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)
Grader	No	40	85.0		50.0	0.0
Grader	No	40	85.0		50.0	0.0
Scraper	No	40		83.6	50.0	0.0
Scraper	No	40		83.6	50.0	0.0
Front End Loader	No	40		79.1	50.0	0.0
Excavator	No	40		80.7	50.0	0.0

Results

Equipment	Calculated (dBA) Lmax	Calculated (dBA) Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Grader	85.0	81.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	85.0	81.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	83.6	79.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	83.6	79.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	79.1	75.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	85.0	87.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Brea Mall Option 1 & 2 Construction Noise Modeling Attenuation Calculations

Levels in dBA Leq

Development Phase		*Fitness/ Residential*	*Residential*	*Retail*	
Construction Activity	**RCNM Reference Noise Level**	**Grace Covenant Church NW**	**Single-family homes/multifamily to south**	**Craig Regional Park**	
Distance in feet	*50*	*325*	*960*	*975*	
Building Demo	83	66	57	57	
Asphalt Demo	80	64	54	54	
Site Preparation	87	71	61	61	
Building Construction	82	66	57	56	
Architectural Coating	77	60	51	51	
Paving	79	63	53	53	
Finish and Landscaping	79	63	53	53	

Attenuation calculated through Inverse Square Law: Lp(R2) = Lp(R1) - 20Log(R2/R1)

BREA-03.3 Vibration Annoyance Attenuation Calculations

Levels in VdB

Distance in feet	**Vibration @ 25 ft**	**Screening Distance** *160*	**Residential** *325*
Vibratory Roller	94.0	70	60.6
Hoe Ram	87.0	63	53.6
Large Bulldozer	87.0	63	53.6
Caisson Drilling	87.0	63	53.6
Loaded Trucks	86.0	62	52.6
Jackhammer	79.0	55	45.6
Small Bulldozer	58.0	34	24.6

BREA-03.3 Vibration Damage Attenuation Calculations

Levels in in/sec PPV

Distance in feet	**Vibration Reference Level at *25 feet***	**Residential to east** *20*
Vibratory Roller	0.21	0.293
Large Bulldozer	0.089	0.124
Caisson Drilling	0.089	0.124
Loaded Trucks	0.076	0.106
Jackhammer	0.035	0.049
Small Bulldozer	0.003	0.004

TRAFFIC NOISE INCREASE CALCULATIONS

BREA-03.3 Option 1&2

Traffic Noise Calculations

	Weekday Option 1						Weekday Option 2					
	ADT Volumes				dBA CNEL Increae		ADT Volumes				dBA CNEL Increae	
Roadway Segment	Existing No Project	Existing Plus Project	Cumulative No Project	Cumulative Plus Project	Project Noise Increase	Cumulative Increase	Existing No Project	Existing Plus Project	Cumulative No Project	Cumulative Plus Project	Project Noise Increase	Cumulative Increase
Lambert Road, east of Berry Street	35,243	35,275	41,498	41,530	0.0	0.7	36,635	36,664	43,400	43,429	0.0	0.7
Lambert Road, east of Brea Boulevard	37,899	37,899	43,809	43,809	0.0	0.6	39,394	39,394	45,481	45,481	0.0	0.6
Lambert Road, west of Santa Fe Road/Kraemer Bc	34,102	34,154	36,912	36,964	0.0	0.3	35,450	35,497	38,411	38,458	0.0	0.4
Brea Boulevard, north of Birch Street	27,699	27,846	30,766	30,913	0.0	0.5	28,801	28,935	32,359	32,493	0.0	0.5
State College Boulevard, north of Birch Street	22,191	22,400	30,405	30,614	0.0	1.4	23,079	23,270	31,908	32,099	0.0	1.4
Kraemer Boulevard, south of Lambert Road	17,098	17,174	17,963	18,039	0.0	0.2	17,776	17,844	18,675	18,743	0.0	0.2
Birch Street, east of Brea Boulevard	18,225	18,427	21,216	21,418	0.0	0.7	18,954	19,138	22,149	22,333	0.0	0.7
Birch Street, east of Randolph Avenue	19,728	19,764	22,330	22,366	0.0	0.5	17,699	17,731	20,363	20,395	0.0	0.6
Birch Street, east of State College Boulevard	25,237	25,348	27,029	27,140	0.0	0.3	26,235	26,335	28,143	28,243	0.0	0.3
Birch Street, east of S Associated Road	24,730	24,841	26,464	26,575	0.0	0.3	25,709	25,809	27,553	27,653	0.0	0.3
Birch Street, east of N Associated Road	21,172	21,283	22,728	22,839	0.0	0.3	22,011	22,111	23,671	23,771	0.0	0.3
Randolph Street, south of Birch Street	7,762	8,616	8,429	9,283	0.5	0.8	7,985	8,766	8,663	9,444	0.4	0.7
State College Boulevard, south of Birch Street	13,849	14,134	17,454	17,739	0.1	1.1	14,410	14,670	18,277	18,537	0.1	1.1
Kraemer Boulevard, south of Birch Street	20,283	20,283	21,307	21,307	0.0	0.2	21,083	21,083	22,147	22,147	0.0	0.2
Imperial Highway, west of Puente Street	43,145	43,513	47,914	48,282	0.0	0.5	44,868	45,203	49,685	50,020	0.0	0.5
Imperial Highway, east of Berry Street	57,428	57,938	63,489	63,999	0.0	0.5	59,723	60,188	65,953	66,418	0.0	0.5
Imperial Highway, east of Brea Boulevard	54,620	55,451	59,787	60,618	0.1	0.5	56,824	57,582	61,974	62,732	0.1	0.4
Imperial Highway, east of State College Boulevard	73,993	75,310	81,688	83,005	0.1	0.5	76,980	78,180	84,738	85,938	0.1	0.5
Imperial Highway, east of SR-57 NB Ramps	54,932	55,565	58,692	59,325	0.0	0.3	57,132	57,709	60,954	61,531	0.0	0.3
Imperial Highway, east of Associated Road	52,740	53,258	55,893	56,411	0.0	0.3	54,848	55,320	58,020	58,492	0.0	0.3
Imperial Highway, east of Castlegate Lane/Placent	52,822	53,143	56,089	56,410	0.0	0.3	54,921	55,213	58,230	58,522	0.0	0.3
Brea Boulevard, south of Imperial Highway	31,274	31,555	34,172	34,453	0.0	0.4	32,525	32,781	35,716	35,972	0.0	0.4
Kraemer Boulevard, south of Imperial Highway	20,284	20,284	21,304	21,304	0.0	0.2	21,084	21,084	22,132	22,132	0.0	0.2
				MAX	0.5	1.4				MAX	0.4	1.4

Traffic Noise Calculations

	Weeekend Option 1						Weeekend Option 2					
	ADT Volumes				dBA CNEL Increae		ADT Volumes				dBA CNEL Increae	
Roadway Segment	Existing No Project	Existing Plus Project	Cumulative No Project	Cumulative Plus Project	Project Noise Increase	Cumulative Increase	Existing No Project	Existing Plus Project	Cumulative No Project	Cumulative Plus Project	Project Noise Increase	Cumulative Increase
Lambert Road, east of Berry Street	36,635	36,664	43,400	43,429	0.0	0.7	36,635	36,632	43,400	43,397	0.0	0.7
Lambert Road, east of Brea Boulevard	39,394	39,394	45,481	45,481	0.0	0.6	39,394	39,394	45,481	45,481	0.0	0.6
Lambert Road, west of Santa Fe Road/Kraemer Bc	35,450	35,497	38,411	38,458	0.0	0.4	35,450	35,426	38,411	38,387	0.0	0.3
Brea Boulevard, north of Birch Street	28,801	28,935	32,359	32,493	0.0	0.5	28,801	28,770	32,359	32,328	0.0	0.5
State College Boulevard, north of Birch Street	23,079	23,270	31,908	32,099	0.0	1.4	23,079	23,042	31,908	31,871	0.0	1.4
Kraemer Boulevard, south of Lambert Road	17,776	17,844	18,675	18,743	0.0	0.2	17,776	17,789	18,675	18,688	0.0	0.2
Birch Street, east of Brea Boulevard	18,954	19,138	22,149	22,333	0.0	0.7	18,954	18,957	22,149	22,152	0.0	0.7
Birch Street, east of Randolph Avenue	17,699	17,731	20,363	20,395	0.0	0.6	17,699	17,754	20,363	20,418	0.0	0.6
Birch Street, east of State College Boulevard	26,235	26,335	28,143	28,243	0.0	0.3	26,235	26,304	28,143	28,212	0.0	0.3
Birch Street, east of S Associated Road	25,709	25,809	27,553	27,653	0.0	0.3	25,709	25,778	27,553	27,622	0.0	0.3
Birch Street, east of N Associated Road	22,011	22,111	23,671	23,771	0.0	0.3	22,011	22,080	23,671	23,740	0.0	0.3
Randolph Street, south of Birch Street	7,985	8,766	8,663	9,444	0.4	0.7	7,985	7,447	8,663	8,125	-0.3	0.1
State College Boulevard, south of Birch Street	14,410	14,670	18,277	18,537	0.1	1.1	14,410	14,386	18,277	18,253	0.0	1.0
Kraemer Boulevard, south of Birch Street	21,083	21,083	22,147	22,147	0.0	0.2	21,083	21,083	22,147	22,147	0.0	0.2
Imperial Highway, west of Puente Street	44,868	45,203	49,685	50,020	0.0	0.5	44,868	44,818	49,685	49,635	0.0	0.4
Imperial Highway, east of Berry Street	59,723	60,188	65,953	66,418	0.0	0.5	59,723	59,583	65,953	65,813	0.0	0.4
Imperial Highway, east of Brea Boulevard	56,824	57,582	61,974	62,732	0.1	0.4	56,824	56,560	61,974	61,710	0.0	0.4
Imperial Highway, east of State College Boulevard	76,980	78,180	84,738	85,938	0.1	0.5	76,980	76,850	84,738	84,608	0.0	0.4
Imperial Highway, east of SR-57 NB Ramps	57,132	57,709	60,954	61,531	0.0	0.3	57,132	57,078	60,954	60,900	0.0	0.3
Imperial Highway, east of Associated Road	54,848	55,320	58,020	58,492	0.0	0.3	54,848	54,824	58,020	57,996	0.0	0.2
Imperial Highway, east of Castlegate Lane/Placent	54,921	55,213	58,230	58,522	0.0	0.3	54,921	54,952	58,230	58,261	0.0	0.3
Brea Boulevard, south of Imperial Highway	32,525	32,781	35,716	35,972	0.0	0.4	32,525	32,443	35,716	35,634	0.0	0.4
Kraemer Boulevard, south of Imperial Highway	21,084	21,084	22,132	22,132	0.0	0.2	21,084	21,084	22,132	22,132	0.0	0.2
				MAX	0.4	1.4				MAX	0.01	1.4

Appendix H: Service Provider Response

Appendices

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Proposed Brea Mall Redevelopment Project
School District Questionnaire

Please verify/respond to the following:

1. Are there additional schools that would serve the project site?

   Not at this time.

School Enrollment and Capacity

School & Location	Enrollment ~~(10-year average)~~ N/A	Total Capacity
Laurel Elementary School	~~368~~ 435 magnet program	455
Brea Junior High School	913	1,248
Brea Olinda High School	1,885	2,720
Source: Aldrete 2018.		

2. What is the average enrollment ~~(10-year average)~~ of each school that would serve the project site?

   N/A see above

3. Would these schools would be able to accommodate a potential increase in enrollment from 312 additional residential units?

   Laurel would not, it appears that the Middle School and High School would as of this date.

4. What impact will the proposed project, in combination with all the other projects planned in the area, have on the ability of the Brea Olinda Unified School District to provide educational services in the area?

   The Magnet Bilingual Program at Laurel would continue, the development would not effect student busing services or meal services at that school.

5. Pursuant to Senate Bill 50, the current statutory school impact fees are as follows:
   - Residential – $3.79/square foot
   - Commercial – $0.61/square foot

   Yes, but the SB50 rates are modified every 24 months and the cost impact per square foot for Single family detached homes is $5.14 and the Multifamily Attached is $5.48.

6. Please add any comments you may wish to make regarding this matter.

   We would like to see the projected number and type of units as well as the square footage per unit type. Are we to assume the project is multifamily units with a total of 149,625 square feet? It is also important to know what the estimated date of completion is so that facilities have sufficient time to be constructed.

Response Prepared By:

Colleen Patterson	Interim CBO
Name	**Title**
Brea Olinda Unified School District	July 15, 2019
Agency	**Date**

Proposed Brea Mall Redevelopment Project
Fire Questionnaire

Please verify/respond to the following:

1. Please list any additional stations that would respond to the site:

Fire Stations and Equipment Serving the Project Site

Station	Address	Equipment
City of Brea Fire Department		
Brea Fire Department – Station #1	555 North Berry Street, Brea	Type 1 – Advanced Life Support, 4 personnel
Brea Fire Department – Station #2	200 North Brea Boulevard, Brea	Pierce/tiller – Advanced Life Support, 4 personnel
Fullerton Fire Department		
Fullerton Fire Department – Station #4	3251 North Harbor Boulevard, Fullerton	Type 1 – Advanced Life Support, 4 personnel
Los Angeles County Fire Department		
LACFD – Station 191	850 West La Habra Boulevard, La Habra	2 paramedics
LACFD – Station 192	520 South Harbor Boulevard, La Habra	Type 1 – Advanced Life Support, 3 personnel
LACFD – Station 193	1000 West Risner Way, La Habra	Type 1 – Advanced Life Support, 3 personnel

2. What is the approximate fire flow requirement for the proposed project? Fire flow is determined by construction type and total square footage of the structure. It will vary and reduction in fire flow could occur due to the factors previously mentioned. At this time the fire flow is 8,000 gpm for a duration of 4 hours. If existing fire hydrants do not provide the required fire flow, then improvements will be made to meet the minimum requirement.

3. The Department's standard is 6 minutes to first arriving unit on scene. What is the average response time to the project site? Approximately 5 minutes.

4. Are there any existing deficiencies in the level of fire protection service currently provided to the area including and surrounding the project site? No existing deficiencies exist at this time.

5. Would this project have a significant impact on the ability to maintain adequate level of fire protection service to the area? No significant impact at this time.

6. What conditions will the Fire Department require or recommended to reduce fire hazards and reduce potential impacts on fire service? The new structures will be fully protected as required by the California Fire and Building Codes, City ordinances and the applicable national standards. The following fire protection systems will be required: automatic fire sprinkler system, automatic fire alarm system, a fire pump, and an emergency responder radio coverage system. Fire apparatus access roads will also be provided to ensure adequate accessibility to the new structures.

7. Please add any other comments you may wish to make regarding this project.

Response Prepared By:

Kathy Schaefer	Division Chief – Fire Marshal
Name	**Title**
Peter Salgado	Fire Protection Analyst
Name	**Title**
Brea Fire Department	September 13, 2019
Agency	**Date**

Proposed Brea Mall Redevelopment Project
Police Questionnaire

Please verify/respond to the following:

1. Please confirm the following station responds to calls from the project site:
   a. The Brea Police Station is located at 1 Civic Center Circle, Brea. Police patrol units work in the field and may be responding from other locations from throughout the city.

2. Please indicate the type of service calls or service demands anticipated by the proposed uses (mall and residential).

a. If the development is more of an expansion of the typical retail and food establishments (with limited or no alcohol sold) currently at the mall, service calls are expected to increase. Standard calls for service include but not limited to theft (shoplifting), burglary, robbery and an occasional assault. In addition, the apartment development located on the mall property will increase calls for service including but not limited to domestic disturbances, noise complaints, suspicious persons/vehicles, burglary/theft investigations as well as traffic/parking complaints.

b. If the mall expansion includes more of a night life atmosphere with restaurants including bars (such as BJ's/Yard House/Cheesecake Factor), with coffee houses and some type of night entertainment, there is an expectation of an increase of service calls similar to the type the police department experiences in the Downtown. Those types of calls are disturbances, alcohol related disturbances, suspicious persons/vehicles, burglary/theft investigations and minor assault incidents.

The exact impact of the Mall expansion will not be known until the Mall expansion has been fully completed and the businesses are operating/apartments occupied.

3. Given the existing level of staffing and equipment, will the police department be able to provide police services to the proposed project? If not, please indicate what will be required to serve the project.

The increase in retail stores as well as outside venue will increase calls for service. Depending upon retail stores, outside entertainment and the types of restaurants which open in the area, there will be an increase service needs from the police department. In addition the apartment development will increase calls for service. The expansion of service needs should be evaluated for increasing police officer strength along with increased resources & equipment.

4. What impact will the proposed project, in combination with all the other projects planned in the area, have on the ability of the police department to provide police services in the area?

The "Core" area of Brea is currently seeing significant development, and a combination of all the developments (Mall/Hines/hotel/Imperial Shopping Center/etc.), all will increase calls for service which will impact the Police Department's ability to service

the already established parts of the city. A current staffing needs assessment is being conducted and may provide a clearer understanding of specific Police Department needs.

5. What conditions will the Police Department require or recommended to reduce safety hazards and reduce potential impacts on police service?

Increase integration with onsite private security with the police department in communications (video access), as well as ability to access locked common areas (knox box keys) for emergency response. Verified Police/Fire radio reception in enclosed areas of the Mall.

6. Please add any comments you may wish to make regarding this matter.

With the Mall development as well as the other projects in the area (Hines/hotel/Imperial Shopping Center/etc.) traffic will be increased in the area to some unknown degree. I do not see any increased traffic lanes, traffic measures being implemented and there may be a need for funds to assist in traffic mitigation measures for this project.

Response Prepared By:

David Dickinson	Lt.
Name	**Title**
Police Department	**8-6-19**
Agency	**Date**

Appendix I1: Traffic Report

The appendices to this document are available electronically.

Appendices

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LINSCOTT LAW & GREENSPAN engineers

REVISED TRAFFIC CIRCULATION ANALYSIS

BREA MALL MIXED-USE PROJECT

Brea, California
July 1, 2022

Prepared for:

PLACEWORKS
3 MacArthur Place, Suite 1100
Santa Ana, CA 92707

LLG Ref. 2-19-4099-1

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APPENDIX

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REVISED TRAFFIC CIRCULATION ANALYSIS

BREA MALL MIXED USE PROJECT

Brea, California
July 1, 2022

1.0 INTRODUCTION

This Traffic Circulation Analysis report addresses the potential traffic and circulation needs associated with Brea Mall Mixed Use Project (hereinafter referred to as Project) in the City of Brea. The Project consists of redevelopment of 15.0-acre in the southwest portion of the Brea Mall property that includes the Sears parcel and adjoining transition areas adjacent to Nordstrom and Macy's. The Project involves demolishing 161,990 square-foot (SF) of the Sears department store and associated auto center and roughly 7.5 acres of surface parking in order to development 247,415 SF of new retail space, inclusive of a 50,000 SF sporting goods store and a 128,000 SF health club. The residential component would construct a 383-unit seven-story apartment building. The proposed Project is located west of the State Route (SR) 57 Freeway and is generally bounded by State College Boulevard to the east, Imperial Highway (State Route 91) to the south, Randolph Avenue to the west, and Birch Street to the north. The Project is expected to be developed in several phases with the Year 2026 utilized to assess the Project's potential traffic implications at full occupancy within a near-term cumulative traffic setting with the addition of project-generate traffic.

1.1 Scope of Work

This traffic circulation report documents the findings and recommendations of a traffic analysis conducted by Linscott, Law & Greenspan, Engineers (LLG) to determine the potential implications associated with the addition of traffic generated by proposed Project. The traffic analysis evaluates the existing operating conditions at eighteen (18) key study intersections within the project vicinity, estimates the trip generation potential of the proposed Project, and forecasts future near-term (Year 2026) and long-term (Year 2045) operating conditions without and with the proposed Project. Where necessary, intersection improvements are identified.

This traffic report satisfies the traffic requirements of the City of Brea and is consistent with the current *Congestion Management Program (CMP) for Orange County.* The Scope of Work for this traffic study is included in ***Appendix A*** and was developed in conjunction with City of Brea Public Works Department staff and in consideration of comments of Caltrans staff.

The project site has been visited and an inventory of adjacent area roadways and intersections was performed. Existing weekday peak hour and Weekend (Saturday) Midday peak hour traffic count information has been collected at eighteen (18) key study intersections for use in the preparation of intersection level of service calculations. Information concerning cumulative projects (planned and/or approved) in the vicinity of the proposed Project has been researched at the Cities of Brea, Fullerton, Chino Hills, La Habra and Placentia. Based on our research, there are twenty-three (23) related projects in the City of Brea, two (2) related project in the City of Fullerton and seven (7)

related projects in the City of Chino Hills. The thirty-two (32) related projects were considered in the near-term cumulative traffic analysis for this project.

This traffic report analyzes existing and future weekday daily, AM peak hour and PM peak hour and weekend (Saturday) midday peak hour traffic conditions for a near-term (Year 2026) and long-term (Year 2045) traffic setting upon completion of the proposed Project. Near-term (Year 2026) cumulative daily and peak hour traffic forecasts were projected by incorporating a one percent (1.0%) annual growth rate and the trip generation potential of thirty-two (32) related projects. Long-term (Year 2045) daily and peak hour traffic forecasts were projected based on modeled traffic projections prepared by OCTA utilizing the OCTAM 5.0 Year 2045 Model.

1.2 Study Area

Eighteen (18) key study intersections have been identified for evaluation in collaboration with City of Brea staff. The eighteen (18) intersections listed below provide regional and local access to the study area and define the extent of the boundaries for this traffic investigation, as well as identifies the governing jurisdiction whose criteria have been applied to that intersection. It should be noted that cities that border the intersection but do not have governing jurisdictions are included in parentheses.

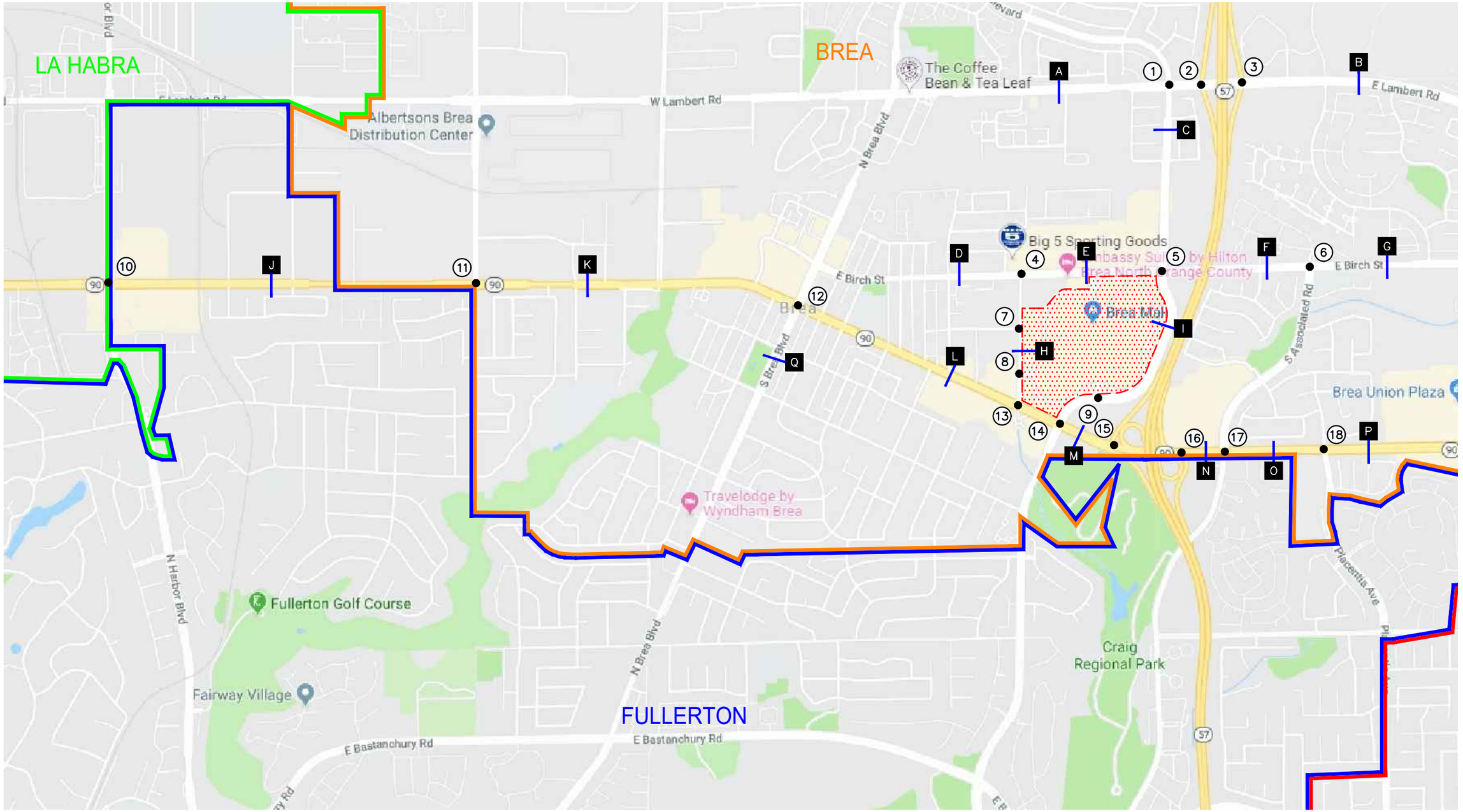
Study Intersection	Applicable Jurisdiction (City Location)			
	Caltrans	City of Brea	City of La Habra	City of Fullerton
1. State College Boulevard at Lambert Road	--	Brea	--	--
2. SR-57 SB Ramps at Lambert Road	Caltrans	(Brea)	--	--
3. SR-57 NB Ramps at Lambert Road	Caltrans	(Brea)	--	--
4. Randolph Avenue at Birch Street	--	Brea	--	--
5. State College Boulevard at Birch Street	--	Brea	--	--
6. S Associated Road at Birch Street	--	Brea	--	--
7. Randolph Avenue at Madison Way	--	Brea	--	--
8. Randolph Avenue at Brea Mall	--	Brea	--	--
9. Brea Mall South at State College Boulevard	--	Brea	--	--
10. Harbor Boulevard at Imperial Highway[1]	Caltrans	--	(La Habra)	(Fullerton)
11. Puente Street at Imperial Highway	Caltrans	(Brea)	--	(Fullerton)
12. Brea Boulevard at Imperial Highway	Caltrans	(Brea)		
13. Randolph Avenue at Imperial Highway	Caltrans	(Brea)	--	--
14. State College Blvd at Imperial Highway[1]	Caltrans	(Brea)	--	--
15. SR-57 SB Ramps at Imperial Highway[1]	Caltrans	(Brea)	--	--
16. SR-57 NB Ramps at Imperial Highway[1]	Caltrans	(Brea)	--	--
17. Associated Road at Imperial Highway	Caltrans	(Brea)	--	--
18. Castlegate Ln/Placentia Ave at Imperial Hwy	Caltrans	(Brea)	--	--

Figure 1-1 presents a Vicinity Map, which illustrates the general location of the proposed Project and depicts the study locations and surrounding street system. The Level of Service (LOS) calculations at these study locations were used to evaluate the need for potential Project-related

[1] Orange County Congestion Management Program (CMP) intersection.

improvements associated with area growth, cumulative projects and the proposed Project. When necessary, this report recommends intersection and/or roadway improvements that may be required to accommodate future traffic volumes and restore/maintain an acceptable Level of Service. Included in this Traffic Circulation Analysis are:

- Existing traffic counts,
- Estimated project traffic generation/distribution/assignment,
- Estimated cumulative project traffic generation/distribution/assignment,
- Weekday AM and PM peak hour and Weekend (Saturday) Midday peak hour capacity analyses for existing conditions,
- Weekday AM and PM peak hour and Weekend (Saturday) Midday peak hour capacity analyses for future near-term (Year 2026) traffic conditions without and with the proposed Project,
- Weekday AM and PM peak hour and Weekend (Saturday) Midday peak hour capacity analyses for future long-term (Year 2045) traffic conditions without and with the proposed Project,
- Intersection Vehicle Queueing Evaluation, and
- Site Access Evaluation.



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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

SOURCE: GOOGLE

KEY

(#) = STUDY INTERSECTION

= STUDY ROADWAY SEGMENT

= BREA MALL

FIGURE 1-1

VICINITY MAP

BREA MALL MIXED-USE PROJECT, BREA

2.0 PROJECT DESCRIPTION

The Brea Mall is an existing regional shopping center that is located on approximately 74 acres of land in the City of Brea in northeast Orange County. The Brea Mall is located west of the State Route 57 (SR-57) Freeway and is generally bound by State College Boulevard to the east, Imperial Highway (State Route 91) to the south, Randolph Avenue to the west, and Birch Street to the north t. ***Figure 2-1*** is an existing aerial photograph of the Brea Mall.

2.1 Existing Brea Mall

The existing Brea Mall currently encompasses 1,291,433 square feet (SF) of Gross Leasable Area (GLA), of which 1,210,438 SF of GLA is occupied and consists of several major department stores and a central core of a mixture of retail shops and restaurant/food uses. Surrounding the retail core are several free-standing retail structures along the Brea Mall Circle, including the Olive Garden, Red Lobster, The Cheesecake Factory, and BJ's Restaurant.

As with any regional shopping center, the mall experiences periodic transitions in tenants and occupancy. The Sears department store, which is designated for demolition, was vacated in April 2018. However, during the time of traffic counts the first floor of the Sears department store had been re-occupied by Q's fashion retail store; the second floor of the Sears department store totaling 80,995 SF of GLA was still vacant.

As the above-described vacant space was not occupied on the dates that traffic counts were conducted for this study (i.e., weekday AM and PM peak period counts and Saturday midday peak period counts), and to account for trips corresponding with the mall's entitled and historically occupied square footage, trip generation for the 80,995 SF of vacant GLA was estimated based on the application of ITE rates/equations, and resulting trips were then assigned and added to the raw traffic counts collected at study intersections.

2.2 Proposed Project

The proposed Project consists of the redevelopment of 15.0 acres in the southwest portion of the Brea Mall property that includes the Sears parcel and adjoining transition areas adjacent to Nordstrom and Macy's. The proposed Project involves demolishing the former Sears department store and associated auto center (161,990 SF) and approximately 7.5 acres of surface parking to allow for the development of a mix of uses including retail, new restaurants, for-rent residential apartment, a resort-type fitness center, and a public gathering space (large "central green" plaza). The total conceptual limit of disturbance for the proposed Project to the existing Brea Mall site is approximately 15.0 acres.

Based on a review of the description of the retail component of the proposed Project, up to 247,415 SF of additional retail space, inclusive of a 50,000 SF sporting goods store and a 128,000 SF health club will be constructed. The residential component of the proposed Project, which would be developed south of the Nordstrom's parking structure, includes the development of a seven-story, 441,027 SF apartment podium with up to 383 apartment homes consisting of 28 studio units, 215 one-bedroom units and 140 two-bedroom units.

Table 2-1 provides the Project development summary. A review of *Table 2-1* indicates that upon completion of the Project, Brea Mall will have total GLA of 1,376,858 SF and a 383-unit apartment community. ***Figure 2-2*** illustrates the conceptual site plan for the Project prepared by Architects Orange.

2.3 Vehicular Site Access

The Brea Mall can be accessed from three of the four surrounding streets bordering the subject property, State College Boulevard, Randolph Avenue, and Birch Street; no vehicular access is provided from Imperial Highway. Vehicular access from Randolph Avenue is currently provided by two (2) signalized intersections, whereas one (1) signalized access is provided along Birch Street. From State College Boulevard, three (3) signalized intersections provide access to the Brea Mall. No change in access to the Brea Mall is proposed as a part of the Project. Since the Project is focused to the southwest portion of the Brea Mall property the southernmost driveways along Randolph Avenue and State College Boulevard are anticipated to be the focus of Project related trips.

2.4 Pedestrian and Bicycle Circulation

Brea Mall is surrounded by other commercial and public facilities and walkability between these properties as well as from existing and future residential uses is facilitated by existing sidewalks, traffic signals at intersections that immediately border the property and crosswalks. Review of current conditions indicates that pedestrian connectively between the mall and adjacent uses are provided via the existing sidewalk system and internal pedestrian pathways. Sidewalks are generally provided throughout the City along with crosswalks at most major intersections, and in particular sidewalks are provided along State College Boulevard, Birch Street, Randolph Avenue, and Imperial Highway bordering the site. Further, at each of the six (6) signalized intersections that provide access to the Brea Mall, crosswalks are provided to provide connectively across the streets that border the site. With the current pedestrian system now in place, access to and from the mall is adequate and will continue to serve the existing development as well as the proposed Project.

In addition to the pedestrian connectivity, the General Plan identifies future Class II bike lanes along Birch Street and State College Boulevard adjacent to the Brea Mall. These future bikeway additions will help improve mobility and direct connection to the surrounding facilities. To provide connectivity to the Class II bike lanes on Birch Street and State College Boulevard, Class II bike lanes and/or Sharrow bike lanes are proposed on the "ring road" and the signalized entries of the Brea Mall as a part of the Project. ***Figure 2-3*** illustrates the conceptual bikeway plan of the Project prepared by raSmith.

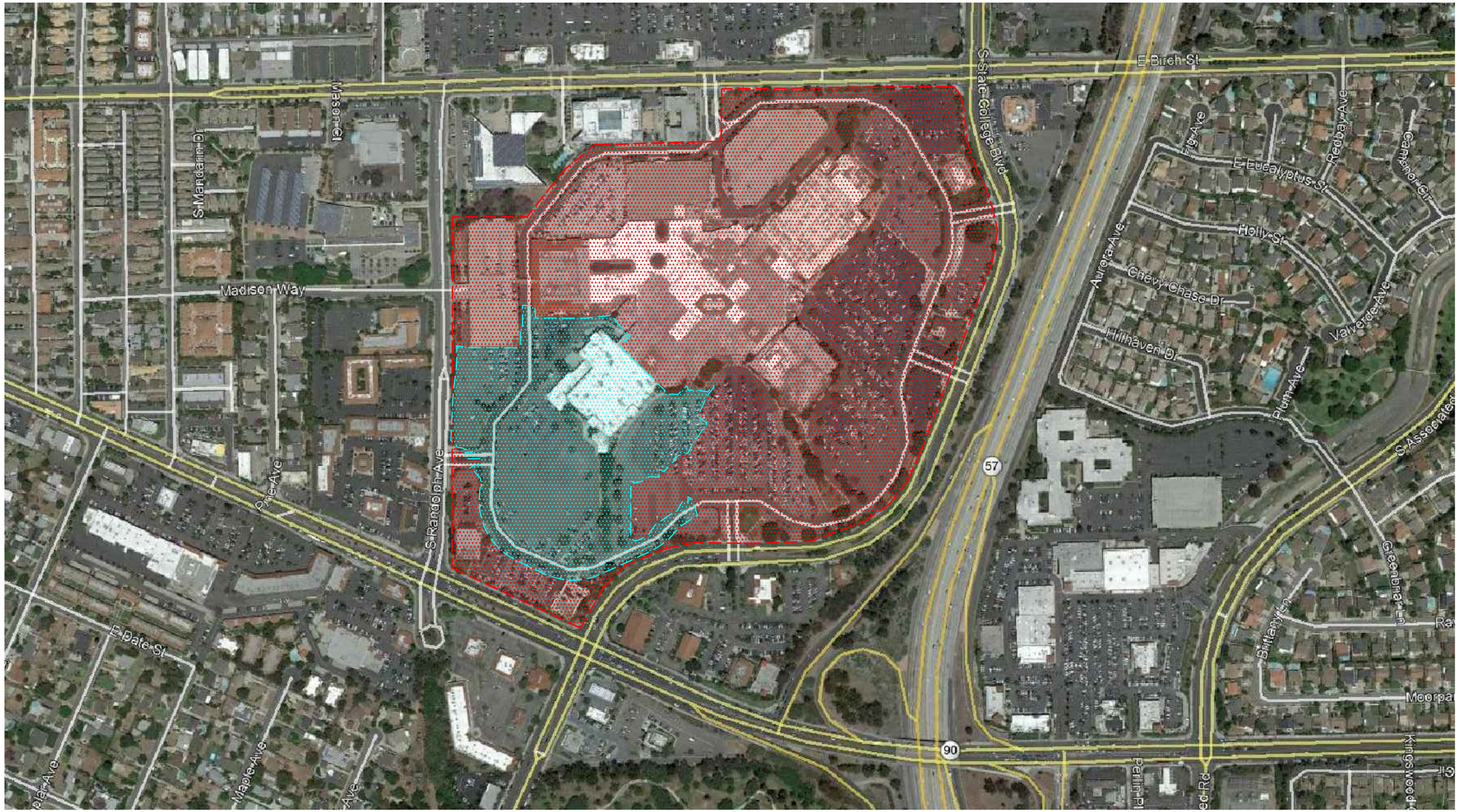
TABLE 2-1

PROJECT DEVELOPMENT SUMMARY

Land Use/Project Description	Development Totals
Existing Occupied Brea Mall:	
▪ Existing Occupied Mall	1,210,438 SF GLA
Existing Occupied Brea Mall + Vacancy:	
▪ Existing Occupied Mall	1,210,438 SF GLA
▪ Vacant Second Story Sears Tenant	80,995 SF GLA
Fully Occupied Brea Mall	*1,291,433 SF GLA*
Existing Occupied Brea Mall + Proposed Project:	
▪ Existing Occupied Mall	1,210,438 SF GLA
▪ Existing Occupied Mall to be Demolished	-80,995 SF GLA
▪ Proposed Project Commercial[2]	
o Sporting Goods	50,000 SF GLA
o Fitness Center	128,000 SF GLA
o Non-Anchor Mall Retail	69,415 SF GLA
Existing Occupied Brea Mall + Proposed Project Subtotal	*1,376,858 SF GLA*
▪ Proposed Project Multifamily Homes[3]	
o Studio	28 Units
o 1 Bedroom	215 Units
o 2 Bedroom	140 Units
Proposed Residential	*383 Units*

[2] *Table 3-2 Brea Mall Mixed Use Project Land Use Summary,* received December 2, 2021.

[3] *Table 3-3A Residential Building A Summary,* received December 2, 2021.



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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

SOURCE: GOOGLE

KEY

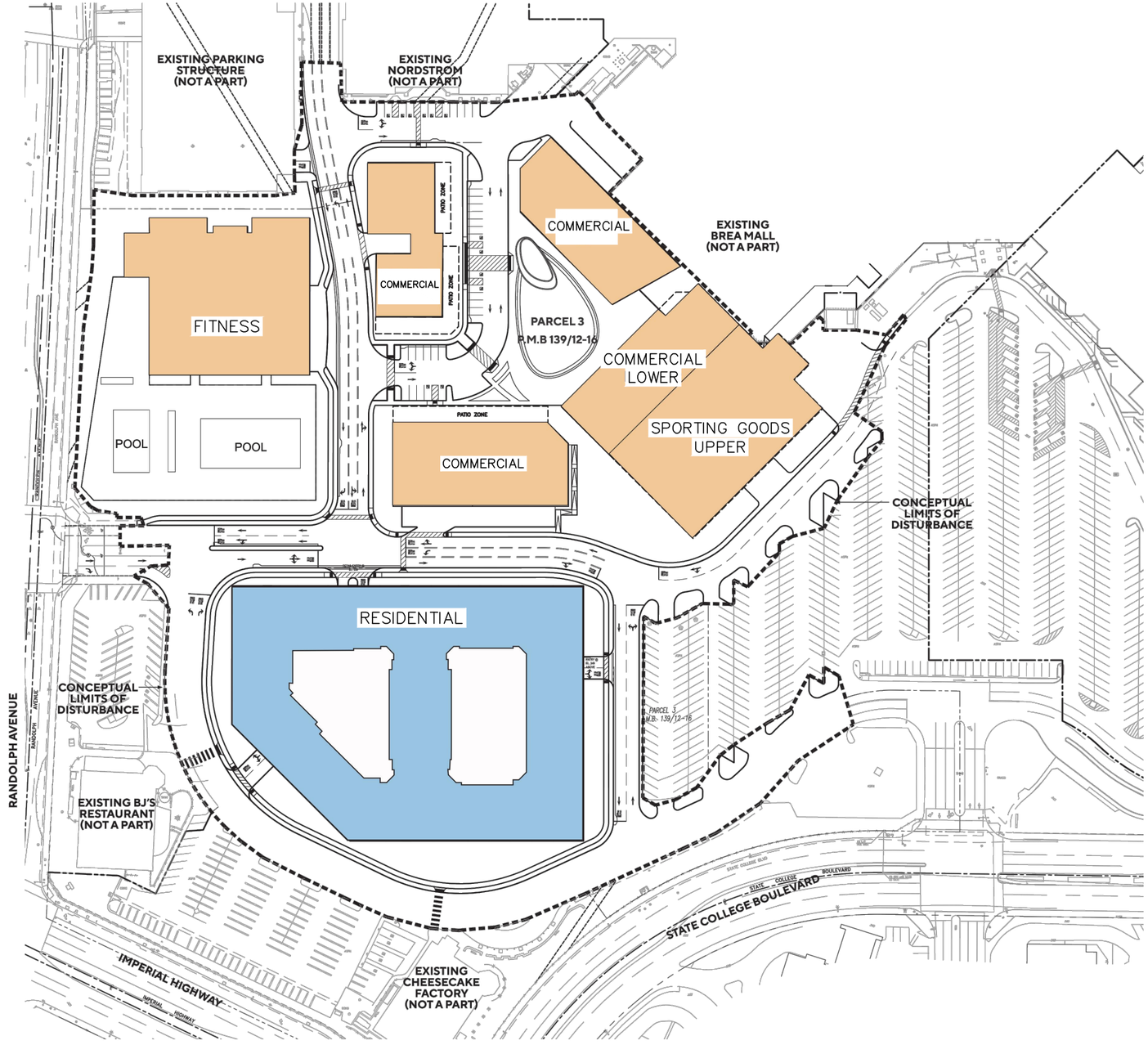
= BREA MALL

= PROJECT SITE

FIGURE 2–1

EXISTING AERIAL PHOTOGRAPH

BREA MALL MIXED–USE PROJECT, BREA



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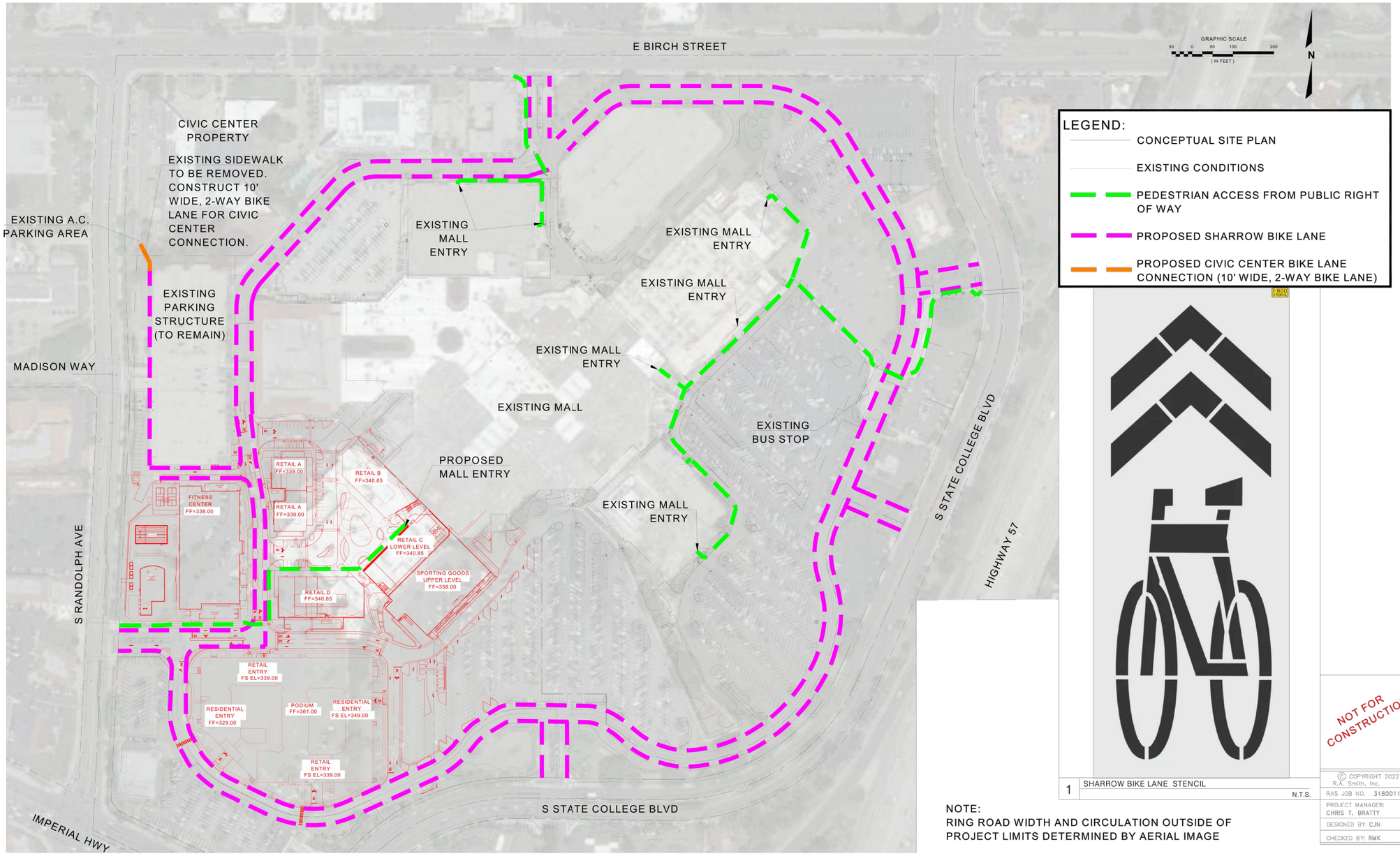
SOURCE: ARCHITECTURE AND DESIGN FIRM AO

FIGURE 2-2

PROPOSED SITE PLAN

BREA MALL EXPANSION & IMPROVEMENT, BREA



1 SHARROW BIKE LANE STENCIL N.T.S.

NOTE:
RING ROAD WIDTH AND CIRCULATION OUTSIDE OF PROJECT LIMITS DETERMINED BY AERIAL IMAGE

NOT FOR CONSTRUCTION

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R.A. Smith, Inc.

RAS JOB NO. 3180011.03
PROJECT MANAGER: CHRIS T. BRATTY
DESIGNED BY: CJN
CHECKED BY: RMK

BREA MALL AND RESIDENCES AT BREA
1065 Brea Mall, Brea, CA 92821

MULTI-MODAL EXHIBIT

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1 OF 1
Scale 1" = 100'
Job No. 2018-170

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LINSCOTT LAW & GREENSPAN engineers

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SOURCE: RASMITH

FIGURE 2-3

CONCEPTUAL BIKEWAY PLAN
BREA MALL MIXED-USE PROJECT, BREA

3.0 EXISTING CONDITIONS

3.1 Existing Street System

The principal local network of streets serving the project site includes Lambert Road, Birch Street, Imperial Highway, Brea Boulevard, and State College Boulevard. The following discussion provides a brief synopsis of these key area streets. The descriptions are based on an inventory of existing roadway conditions.

Lambert Road is a six-lane, divided roadway west of Kraemer Boulevard and a four-lane, divided roadway east of Kraemer Boulevard, oriented in the east-west direction. The posted speed limit on Lambert Road is 45 miles per hour (mph) west of SR-57 Freeway and 50 miles per hour (mph) east of SR-57 Freeway. On-street parking is not permitted along this roadway. Traffic signals control the study intersections of Lambert Road at Puente Street, Brea Boulevard, State College Boulevard, SR-57 SB Ramps, SR-57 NB Ramps, and Santa Fe Road/Kraemer Boulevard. Lambert Road is designated as a Major Arterial in the City's Master Plan of Roadways.

Birch Street is a four-lane, divided roadway oriented in the east-west direction that borders the Brea Mall on the north. The posted speed limit on Birch Street is 50 miles per hour (mph). On-street parking is not permitted along this roadway. Traffic signals control the study intersections of Birch Street at Brea Boulevard, Randolph Avenue, State College Boulevard, S Associated Road, N Associated Road, and Kraemer Boulevard. Birch Street Road is designated as a Secondary Arterial in the City's Master Plan of Roadways, except between Randolph Avenue and Associated Road, where it is designated as a Primary Arterial.

Imperial Highway is a six-lane, divided roadway generally oriented in the east-west direction. The posted speed limit on Imperial Highway is 45 miles per hour (mph) west of the SR-57 Freeway and 50 miles per hour (mph) east of the SR-57 Freeway. On-street parking is not permitted along this roadway. A traffic signal controls the study intersections of Imperial Highway at Harbor Boulevard, Puente Street, Brea Boulevard, Randolph Avenue, State College Boulevard, SR-57 SB Ramps, SR-57 NB Ramps, Associated Road, Placentia Avenue, and Kraemer Boulevard. Imperial Highway is designated as a Smart Street in the City's Master Plan of Roadways.

Brea Boulevard is a four-lane, divided roadway generally oriented in the north-south direction. The posted speed limit on Brea Boulevard is 40 miles per hour (mph) south of Imperial Highway and 35 miles per hour (mph) north of Imperial Highway. On-street parking is not permitted along this roadway. A traffic signal controls the study intersections of Brea Boulevard at Bastanchury Road, Imperial Highway, Birch Street, and Lambert Road. Brea Boulevard is designated as a Major Arterial, south of Imperial Highway, and a Primary Arterial, north of Imperial Highway, in the City's Master Plan of Roadways.

State College Boulevard is a four-lane, divided roadway generally oriented in the north-south direction that borders the Brea Mall on the east. The posted speed limit on State College Boulevard is 40 miles per hour (mph). On-street parking is not permitted along this roadway. A traffic signal controls the study intersections of State College Boulevard at Bastanchury Road, Imperial Highway,

Birch Street, and Lambert Road. State College Boulevard is designated as a Major Arterial, south of Imperial Highway, a Primary Arterial, between Imperial Highway and Birch Street, and a Secondary Arterial, north of Birch Street, in the City's Master Plan of Roadways.

Randolph Avenue is a four-lane, divided roadway oriented in the north-south direction that borders the Brea Mall on the west. The posted speed limit on Randolph Avenue is 40 miles per hour (mph). On-street parking is not permitted along this roadway. Traffic signals control the study intersections of Randolph Avenue at Madison Way/Brea Mall and Brea Mall.

Figure 3-1 presents an inventory of the existing roadway conditions for the arterials and intersections evaluated in this report. This figure identifies the number of travel lanes for key arterials, as well as intersection configurations and controls for the key area study intersections.

3.2 Existing Public Transit

Public transit bus service is provided in the project area by the Orange County Transportation Authority (OCTA). Within the subject property, the Brea Transit Center is Five (5) OCTA bus routes operate within the vicinity of the Project site on Birch Street and State College Boulevard, which consist of the following:

- OCTA Route 57 (Brea to Newport Beach): Route 57 is a local bus route serving the Cities of Brea, Fullerton, Anaheim, Orange, Santa Ana, Costa Mesa, and Newport Beach. The major routes of travel include State College Boulevard and Bristol Street. Nearest to the project site are bus stops along State College Boulevard at the intersections of Imperial Highway and Birch Street. Route 57 operates on approximate 15-minute headways during weekdays and 30-minute headways on weekends. The Brea Mall Transit Center is served by this bus route.
- OCTA Route 129 (La Habra to Anaheim): Route 129 is a community bus route serving the Cities of Anaheim, Placentia, Yorba Linda, Brea, and La Habra. The major routes of travel include La Habra Boulevard, Brea Boulevard, Birch Street, and Kraemer Boulevard. Nearest to the project site are bus stops along Brea Boulevard at the intersection of Birch Street. Route 129 operates on approximate 30-minute headways during weekdays and 60-minute headways on weekends. The Brea Mall Transit Center is served by this bus route.
- OCTA Route 143 (La Habra to Brea): Route 143 is a community bus route serving the Cities of Fullerton, Brea, and La Habra. The major routes of travel include Whittier Boulevard, Harbor Boulevard, Brea Boulevard, and Birch Street. Nearest to the project site are bus stops on Brea Boulevard at Imperial Highway, Birch Street at Randolph Avenue, Birch Street at State College Boulevard, and at Brea Mall. Route 143 operates on approximate 75-minute headways during weekdays and 65-minute headways on weekends. The Brea Mall area is served by this bus route.
- OCTA Route 153 (Brea to Anaheim): Route 153 is a community bus route serving the Cities of Brea, Placentia, Fullerton, Anaheim, and Orange. The major routes of travel include Placentia Avenue. Nearest to the project site are bus stops on Birch Street at the intersection with State College Boulevard. Route 153 operates on approximate 60-minute headways during weekdays and weekends. The Brea Mall Transit Center is served by this bus route.
- OCTA Route 213 (Brea to Irvine Express). Route 213 is an express bus route serving the Cities of Brea, Placentia, Fullerton, Anaheim, Orange, Tustin, Santa Ana, and Irvine via the SR-55

Freeway. Nearest to the project site are bus stops on Brea Boulevard at the intersection with Birch Street. Route 213 operates on approximate 30-minute headways during weekday peak hours; no bus service is provided on the weekends. The Brea Mall Transit Center is served by this bus route.

Figure 3-2 graphically illustrates the transit routes of OCTA within the vicinity of the Project site. ***Figure 3-3*** graphically illustrates the directional transit routes of OCTA within the Brea Mall site. ***Figure 3-4*** identifies the location of the existing bus stops in proximity to the Project site.

As shown in *Figure 3-3*, access to public transit is provided via bus stops along Birch Street and State College Boulevard, inclusive of the site's signalized intersections. Further a transit center/hub is located within the existing Brea Mall site and is served by four (4) OCTA bus routes.

3.3 Existing Bikeway Plan

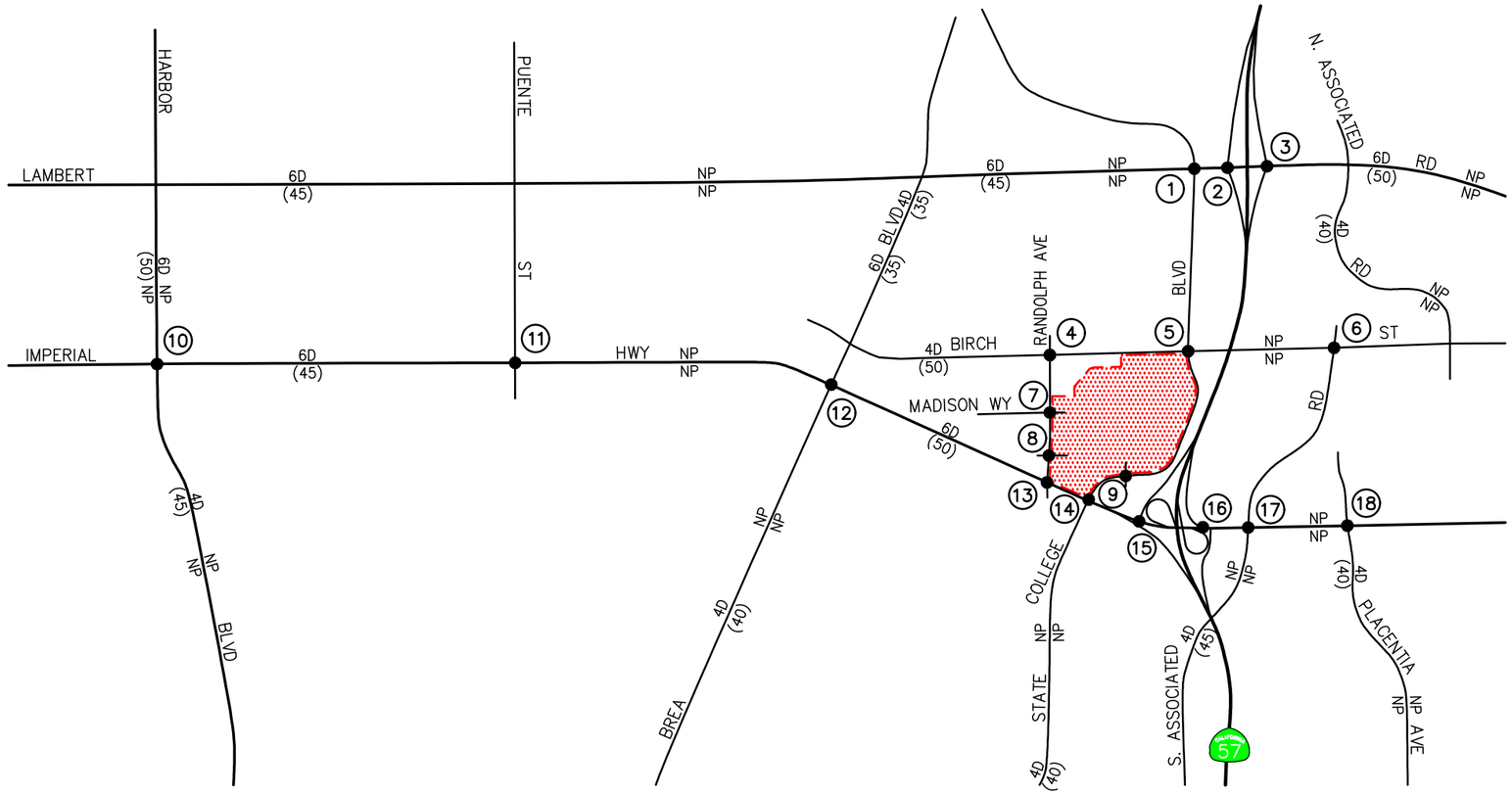
The City of Brea promotes bicycling as a means of mobility and a way in which to improve the quality of life within its community. The Bikeway Plan recognizes the needs of bicycle users and aims to create a complete and safe bicycle network throughout the City. The City of Brea Bike Plan (existing and proposed) is shown on ***Figure 3-5***. In close proximity to the site, an existing Class II bike lane is provided along Birch Street, from just west of State College Boulevard to the east, east of SR-57 Freeway and State College Boulevard, north of Birch Street. The Tracks at Brea, which are separated east/west Class I bikeway facility, is located on block to the north of the Brea Mall. There is a proposed Class II bike lane along Birch Street to the west and along State College Boulevard to the south.

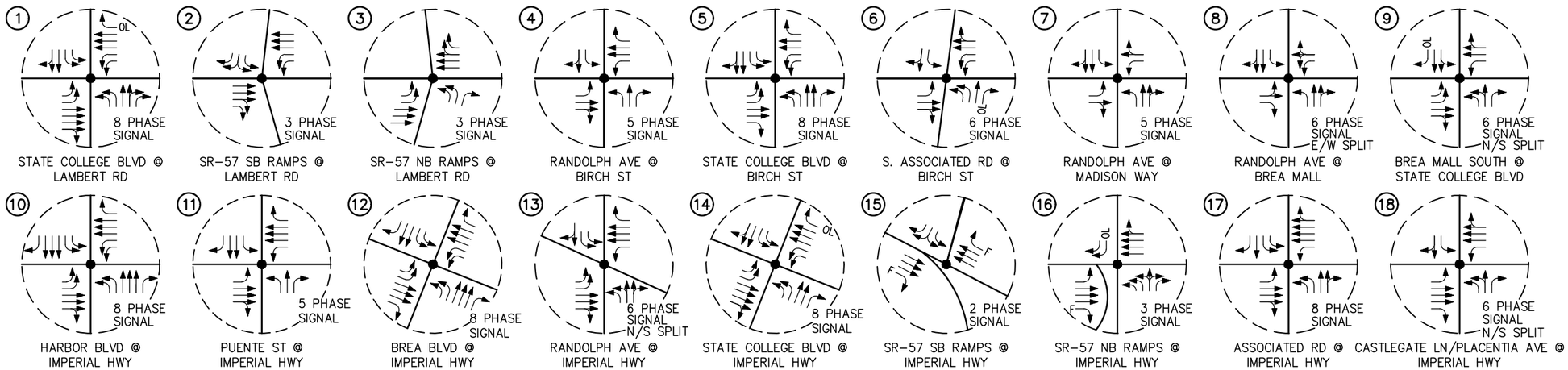
3.4 Existing Traffic Volumes

Eighteen (18) key study intersections and seventeen (17) roadway segments have been identified as the locations at which to evaluate existing and future traffic operating conditions. Some portion of potential project-related traffic will pass through each of these intersections. These key locations were selected for evaluation based on discussions with City of Brea staff.

Existing weekday daily, AM peak hour and PM peak hour and weekend daily and Midday peak hour traffic volumes for the eighteen (18) key study intersections and seventeen (17) roadway segments were obtained from manual turning movement counts conducted by National Data and Surveying Services in 2018 or 2019. To account for recently occupied developments such as In-N-Out which is located at Randolph Avenue and Imperial Highway, a conservative growth factor of 5% has been applied to the Year 2018/2019 conditions to establish Year 2022 pre-COVID-19 baseline traffic conditions.

As discussed previously, approximately 80,995 SF GLA of mall space was not occupied on the dates that traffic counts were conducted. To address this, and to account for trips corresponding with the mall's entitled and historically occupied square footage, trip generation for this floor area was estimated based on the application of ITE rates/equations, and resulting trips were then assigned to the street system and added to the raw traffic counts collected at the key intersections.





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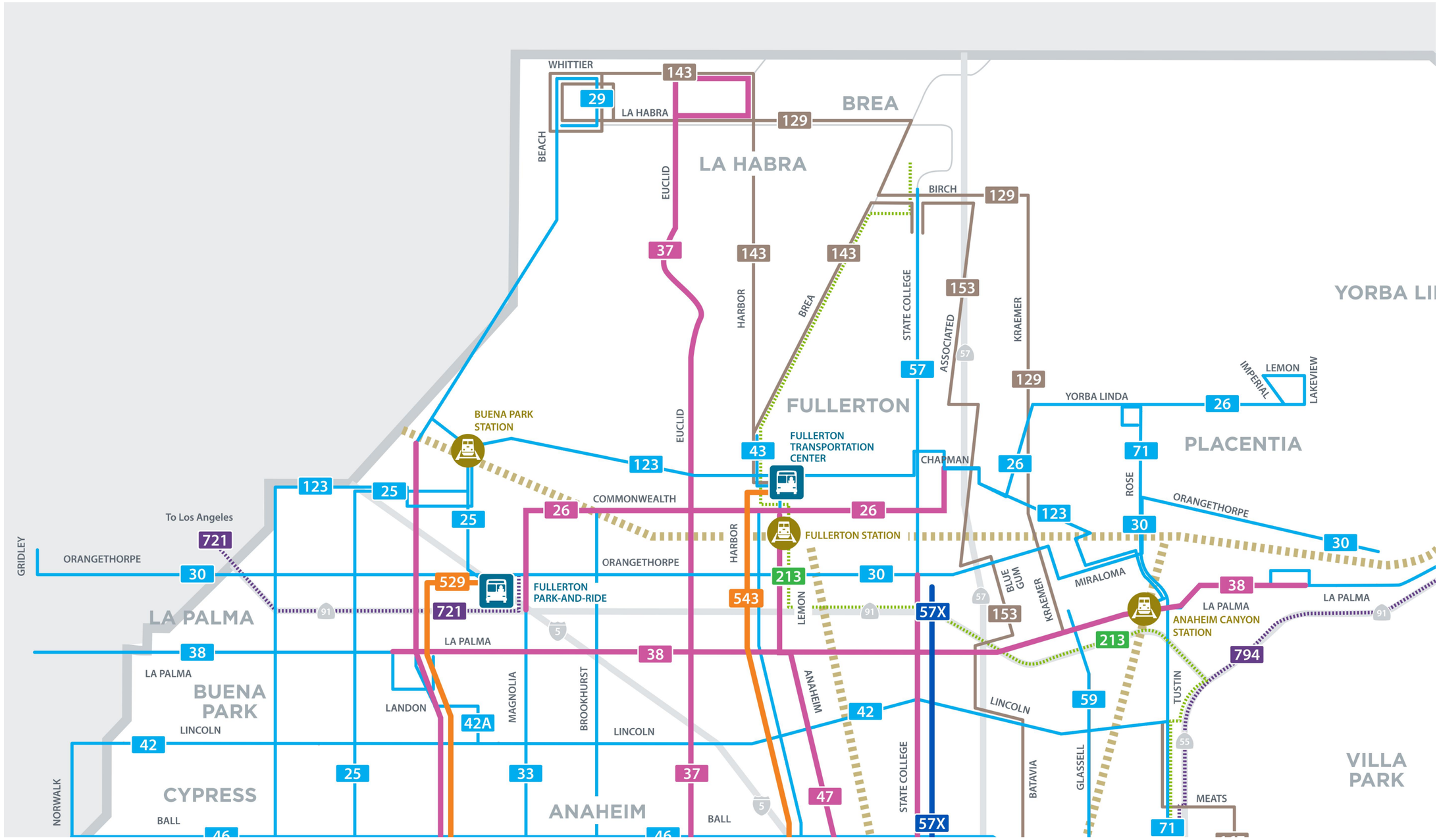
KEY

← = APPROACH LANE ASSIGNMENT
● = TRAFFIC SIGNAL, ▼ = STOP SIGN
P = PARKING, NP = NO PARKING
U = UNDIVIDED, D = DIVIDED
2 = NUMBER OF TRAVEL LANES
(XX)= POSTED SPEED LIMIT (MPH)
F = FREE-RIGHT
OL = OVERLAP
▒ = BREA MALL

FIGURE 3-1

EXISTING ROADWAY CONDITIONS AND INTERSECTION CONTROLS

BREA MALL EXPANSION & IMPORVEMENTS, BREA



n:\4000\2194099 - brea mall expansion & improvement, brea\dwg\4099 f3-2.dwg LDP 11:43:00 04-19-2022 kopulsky

LINSCOTT LAW & GREENSPAN engineers

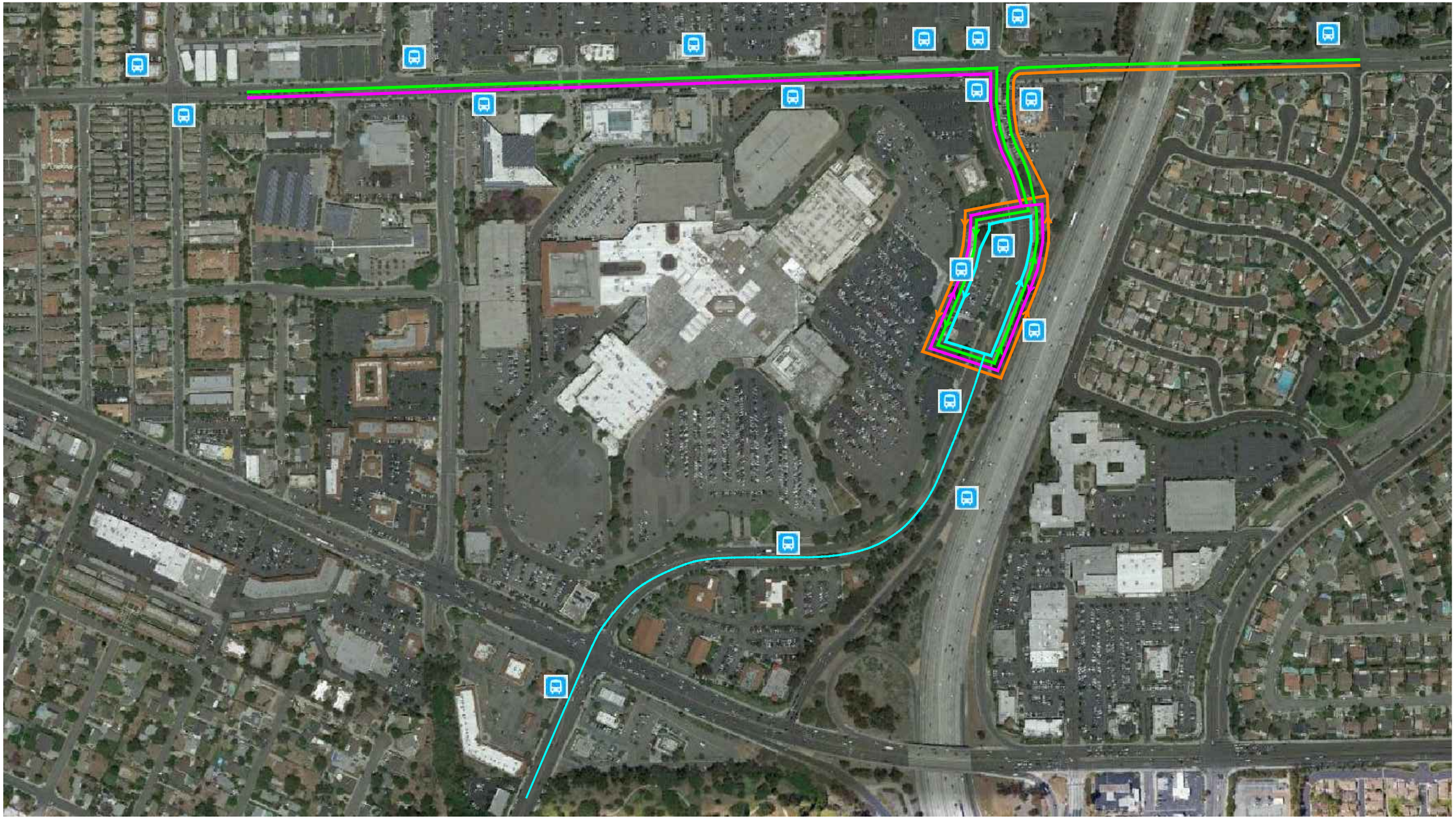
N NO SCALE

SOURCE: OCTA

FIGURE 3-2

OCTA ROUTES

BREA MALL MIXED-USE PROJECT, BREA



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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

SOURCE: CITY OF BREA

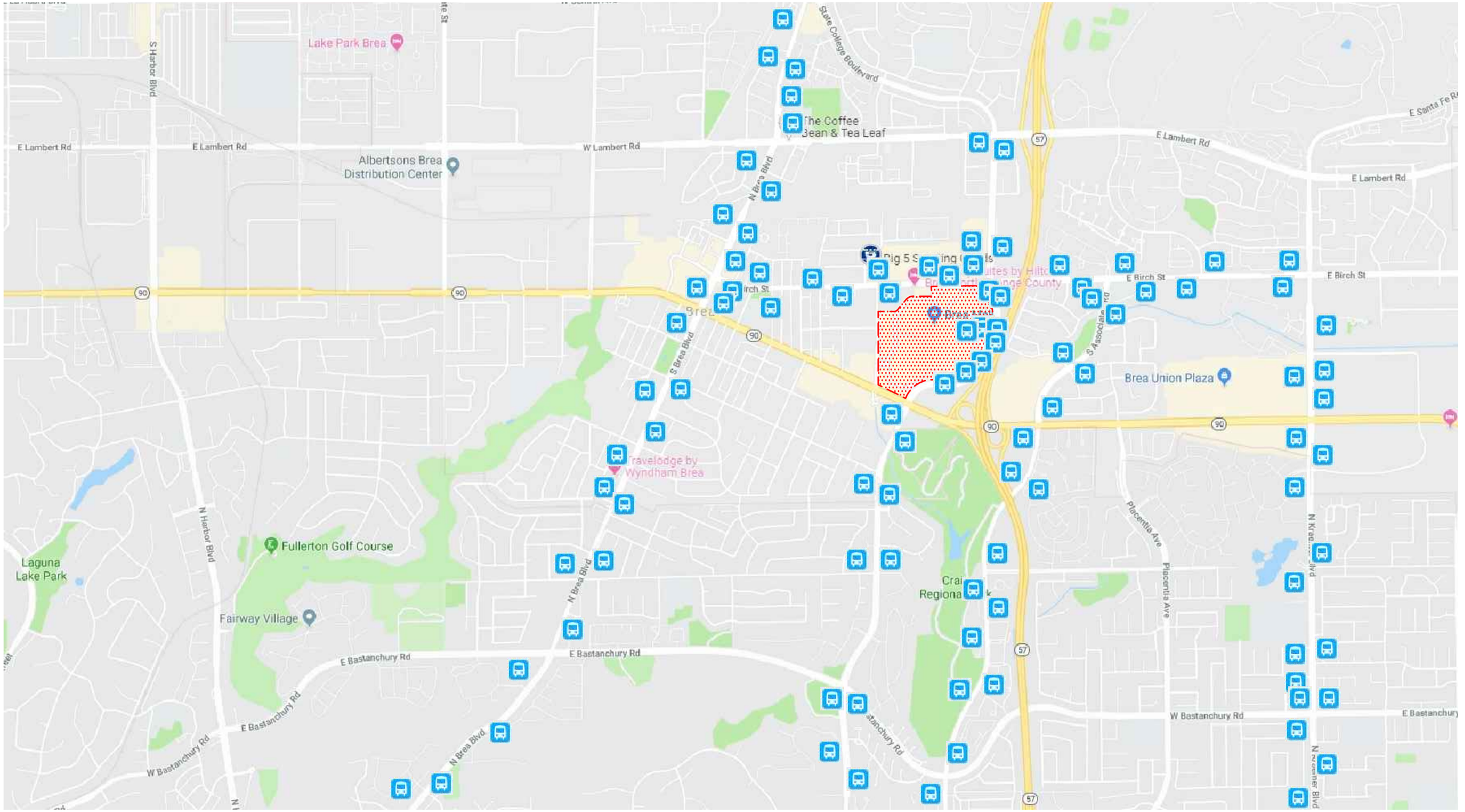
KEY

= ROUTE 57
= ROUTE 129
= ROUTE 143
= ROUTE 153
= TRANSIT STOP

FIGURE 3-3

OCTA ROUTES WITHIN BREA MALL SITE

BREA MALL MIXED-USE PROJECT, BREA



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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

SOURCE: GOOGLE

KEY

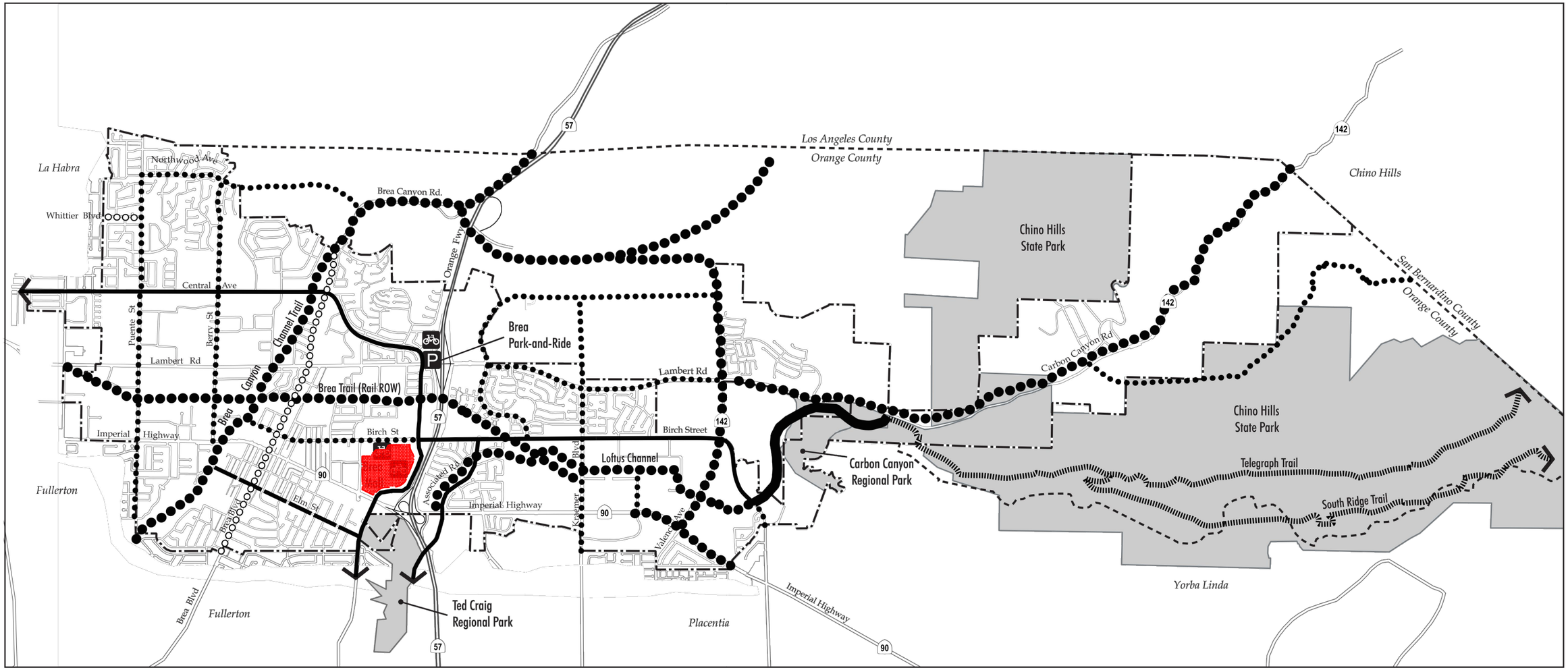
= PROJECT SITE

= TRANSIT STOP

FIGURE 3-4

TRANSIT STOP LOCATIONS

BREA MALL MIXED-USE PROJECT, BREA



Legend

- City Boundary
- Sphere of Influence

Bike Ways

- Bike Path (Class I)
- Bike Lane (Class II)
- Bike Route (Class III)
- Off Road (Unpaved)

Bike Ways (Proposed)

- Bike Path (Class I)
- Bike Lane (Class II)
- Bike Route (Class III)

- Park and Ride
- Bike Parking Facility

SOURCE: CITY OF BREA

NO SCALE

FIGURE 3–5

CITY OF BREA BIKE PLAN

BREA MALL MIXED–USE PROJECT, BREA

n:\4000\2194099 – brea mall expansion & improvement, brea\dwg\4099 f3–5.dwg LDP 13:05:59 04–14–2022 kopulsky

Figures 3-6 and ***3-7*** illustrate the existing weekday AM and PM peak hour traffic volumes at the eighteen (18) key study intersections evaluated in this report, respectively. *Figure 3-7* also presents the existing average weekday daily traffic volumes for the seventeen (17) roadway segments in the vicinity of the proposed Project.

Figure 3-8 illustrates the existing weekend (Saturday) Midday peak hour traffic volumes at the eighteen (18) key study intersections evaluated in this report, respectively. *Figure 3-8* also presents the existing average weekend daily traffic volumes for the seventeen (17) roadway segments in the vicinity of the proposed Project.

Appendix B contains the detailed peak hour and daily traffic count sheets for the key intersections and roadway segments evaluated in this report.

3.5 Level Of Service (LOS) Analysis Methodologies

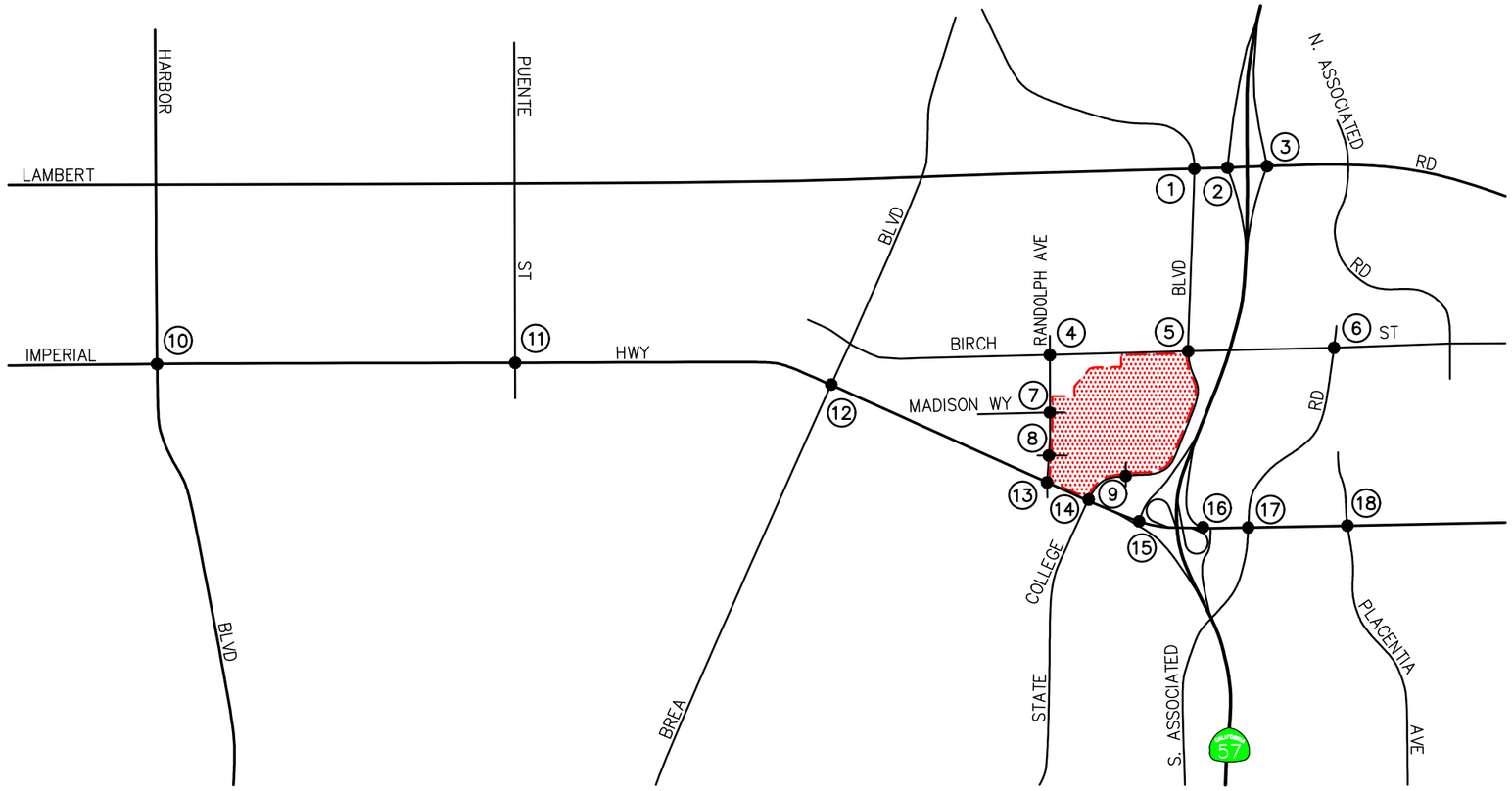
Existing weekday AM and PM peak hour operating conditions for the study intersections were evaluated using the *Intersection Capacity Utilization* (ICU) methodology for signalized intersections as well as the methodology outlined in the *Highway Capacity Manual*. Per the City's direction, the Intersection Capacity Utilization (ICU) method will be used for the purpose of consistency with the City of Brea General Plan.

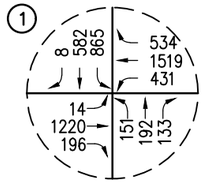
3.5.1 *Intersection Capacity Utilization (ICU) Method of Analysis*

In conformance with City of Brea and Orange County CMP requirements, existing weekday AM and PM peak hour and Weekend (Saturday) Midday peak hour operating conditions for the key signalized study intersections were evaluated using the Intersection Capacity Utilization (ICU) method. The ICU technique is intended for signalized intersection analysis and estimates the volume to capacity (V/C) relationship for an intersection based on the individual V/C ratios for key conflicting traffic movements. The ICU numerical value represents the percent signal (green) time, and thus capacity, required by existing and/or future traffic. It should be noted that the ICU methodology assumes uniform traffic distribution per intersection approach lane and optimal signal timing.

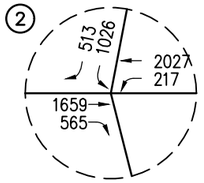
Per City of Brea per City of La Habra requirements, the ICU calculations use a lane capacity of 1,700 vehicles per hour (vph) for through and all turn lanes. A clearance adjustment factor of 0.05 was added to each Level of Service calculation.

The ICU value translates to a Level of Service (LOS) estimate, which is a relative measure of the intersection performance. The ICU value is the sum of the critical volume to capacity ratios at an intersection; it is not intended to be indicative of the LOS of each of the individual turning movements. The six qualitative categories of Level of Service have been defined along with the corresponding ICU value range and are shown in ***Table 3-1***.

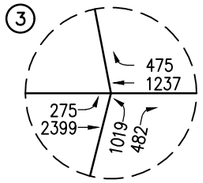




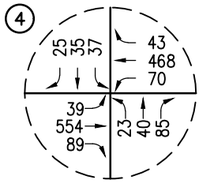
1 STATE COLLEGE BLVD @ LAMBERT RD



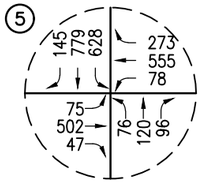
2 SR-57 SB RAMPS @ LAMBERT RD



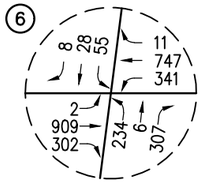
3 SR-57 NB RAMPS @ LAMBERT RD



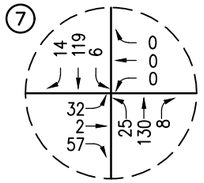
4 RANDOLPH AVE @ BIRCH ST



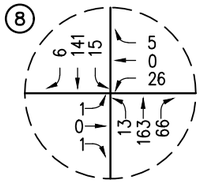
5 STATE COLLEGE BLVD @ BIRCH ST



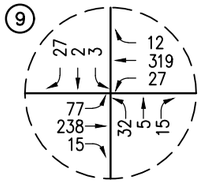
6 S. ASSOCIATED RD @ BIRCH ST



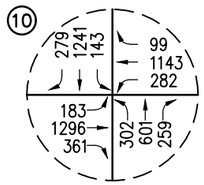
7 RANDOLPH AVE @ MADISON WAY



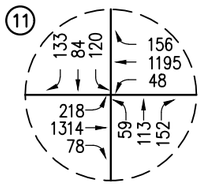
8 RANDOLPH AVE @ BREA MALL



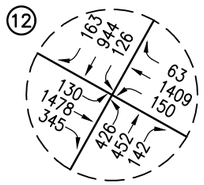
9 BREA MALL SOUTH @ STATE COLLEGE BLVD



10 HARBOR BLVD @ IMPERIAL HWY



11 PUENTE ST @ IMPERIAL HWY



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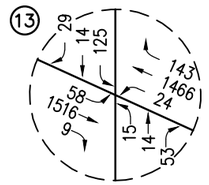
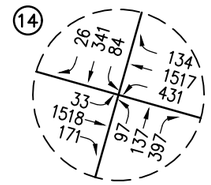
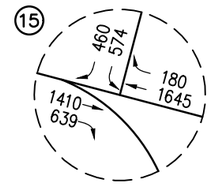


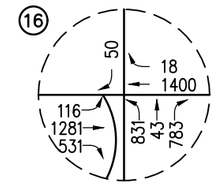
13 RANDOLPH AVE @ IMPERIAL HWY



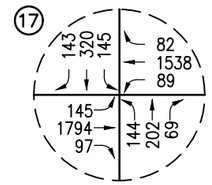
14 STATE COLLEGE BLVD @ IMPERIAL HWY



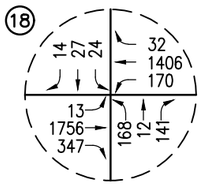
15 SR-57 SB RAMPS @ IMPERIAL HWY



16 SR-57 NB RAMPS @ IMPERIAL HWY



17 ASSOCIATED RD @ IMPERIAL HWY



18 CASTLEGATE LN/PLACENTIA AVE @ IMPERIAL HWY

KEY

(#) = STUDY INTERSECTION

= BREA MALL

LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

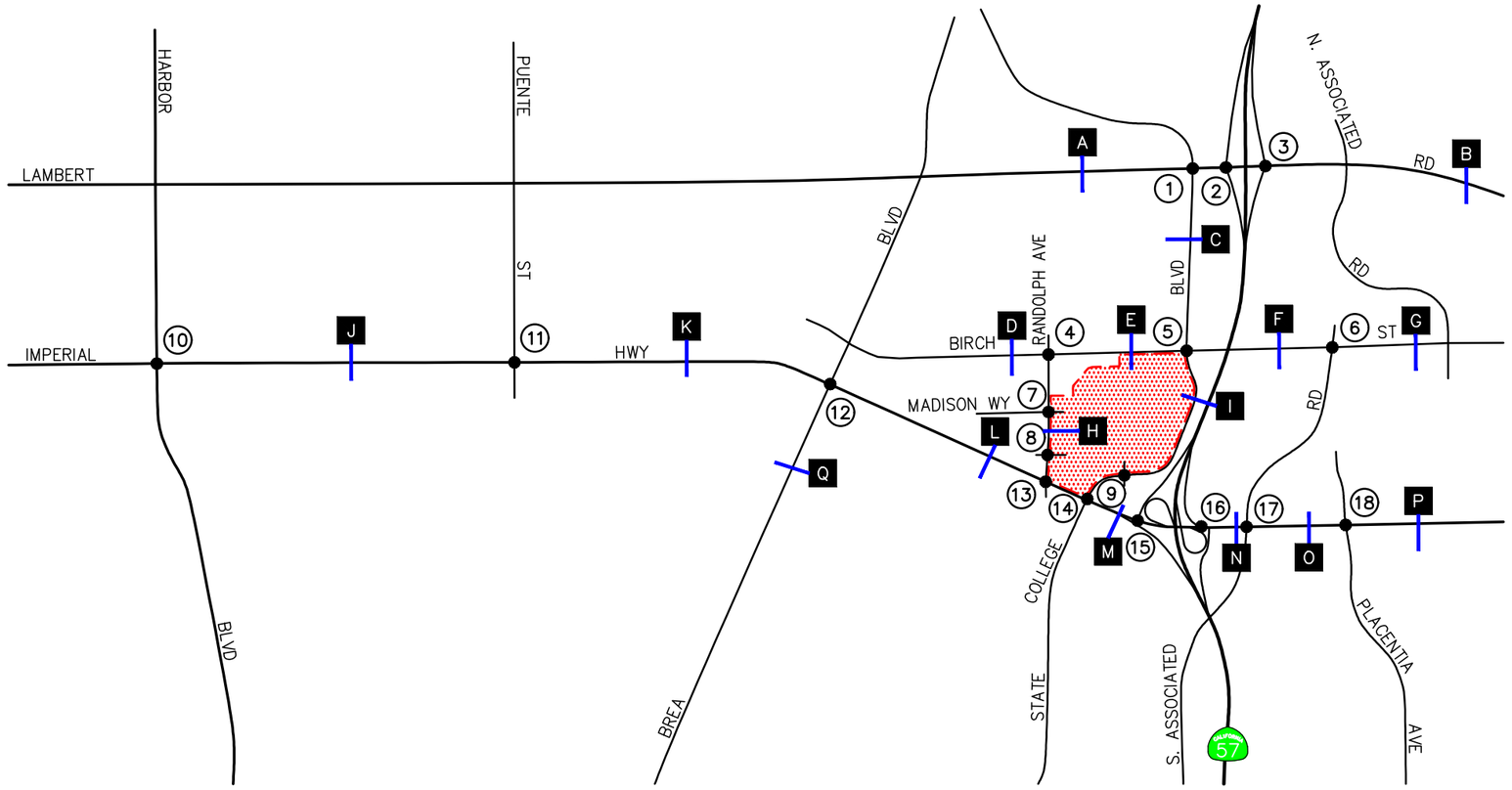
FIGURE 3-6

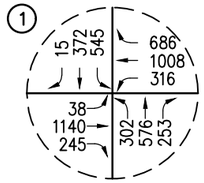
EXISTING AM PEAK HOUR TRAFFIC VOLUMES

BREA MALL EXPANSION & IMPORVEMENTS, BREA

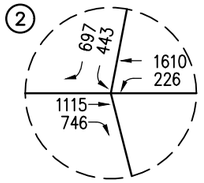
n:\4000\2194099 - brea mall expansion & improvement, brea\dwg\4099 f3-6.dwg LDP 14:16:47 04-14-2022 kopulsky

LOCATION	VOLUME
A	39,014
B	35,105
C	22,844
D	18,761
E	20,308
F	25,979
G	25,457
H	7,991
I	14,256
J	44,414
K	59,117
L	56,226
M	76,169
N	56,548
O	54,291
P	54,375
Q	32,194

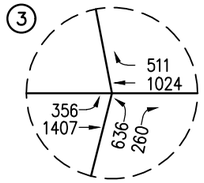




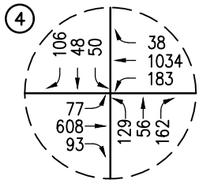
STATE COLLEGE BLVD @ LAMBERT RD



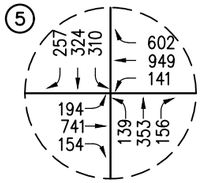
SR-57 SB RAMPS @ LAMBERT RD



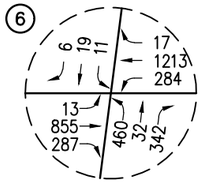
SR-57 NB RAMPS @ LAMBERT RD



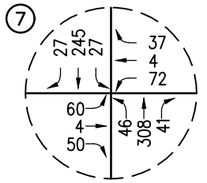
RANDOLPH AVE @ BIRCH ST



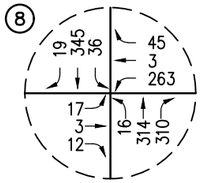
STATE COLLEGE BLVD @ BIRCH ST



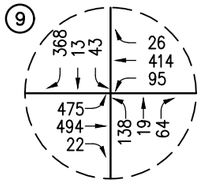
S. ASSOCIATED RD @ BIRCH ST



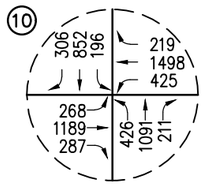
RANDOLPH AVE @ MADISON WAY



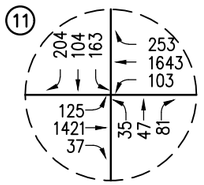
RANDOLPH AVE @ BREA MALL



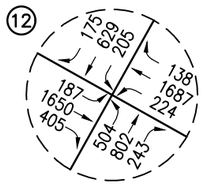
BREA MALL SOUTH @ STATE COLLEGE BLVD



HARBOR BLVD @ IMPERIAL HWY



PUENTE ST @ IMPERIAL HWY



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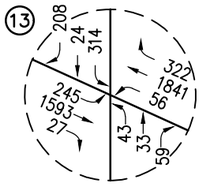
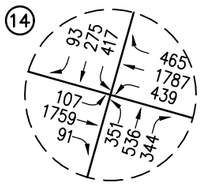
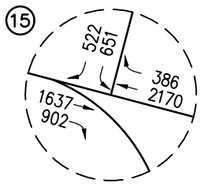


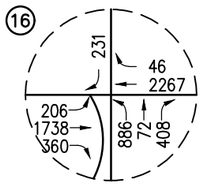
RANDOLPH AVE @ IMPERIAL HWY



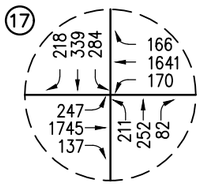
STATE COLLEGE BLVD @ IMPERIAL HWY



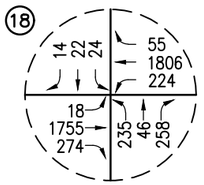
SR-57 SB RAMPS @ IMPERIAL HWY



SR-57 NB RAMPS @ IMPERIAL HWY



ASSOCIATED RD @ IMPERIAL HWY



CASTLEGATE LN/PLACENTIA AVE @ IMPERIAL HWY

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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

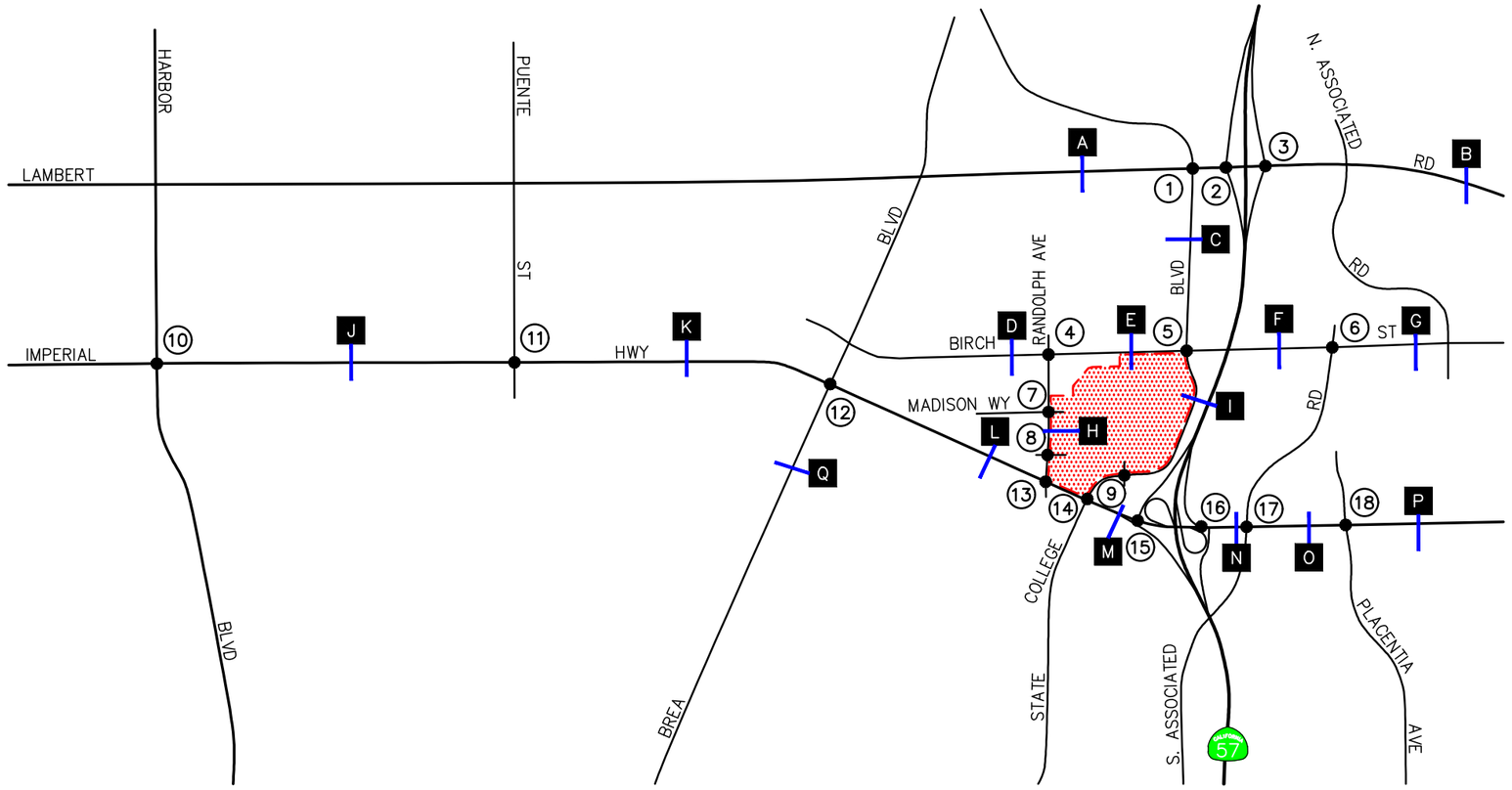
KEY
(#) = STUDY INTERSECTION
= STUDY ROADWAY SEGMENT
= BREA MALL

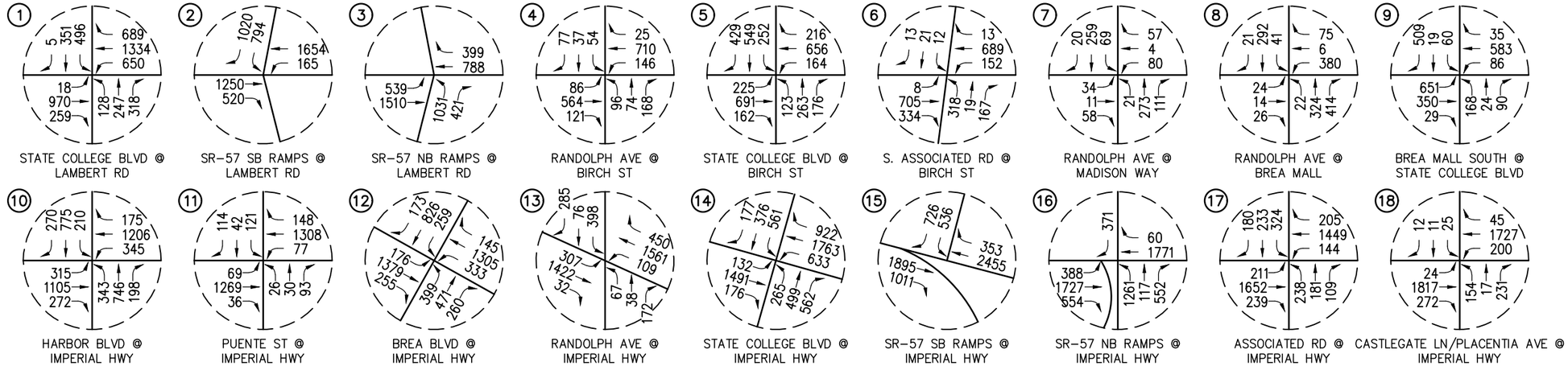
FIGURE 3-7

EXISTING PM PEAK HOUR AND DAILY TRAFFIC VOLUMES

BREA MALL EXPANSION & IMPORVEMENTS, BREA

LOCATION	VOLUME
A	40,553
B	36,493
C	23,757
D	19,511
E	18,220
F	27,007
G	26,465
H	8,219
I	14,833
J	46,187
K	61,480
L	58,496
M	79,245
N	58,813
O	56,462
P	56,536
Q	33,481





n:\4000\2194099 - brea mall expansion & improvement, brea\dwg\4099 f3-8.dwg LDP 14:16:59 04-14-2022 kopulsky

LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

(#) = STUDY INTERSECTION

= STUDY ROADWAY SEGMENT

= BREA MALL

FIGURE 3-8

EXISTING WEEKEND (SATURDAY) MIDDAY PEAK HOUR AND DAILY TRAFFIC VOLUMES

BREA MALL EXPANSION & IMPORVEMENTS, BREA

3.5.2 *Highway Capacity Manual (HCM) Method of Analysis (Signalized Intersections)*

Existing weekday AM and PM peak hour and Weekend (Saturday) Midday peak hour operating conditions for key study intersections under City of Brea, City of Fullerton and/or Caltrans jurisdiction were evaluated using the methodology outlined in *Chapter 19 of the Highway Capacity Manual 6 (HCM 6)* for signalized intersections, the methodology outlined in *Chapter 20 of the HCM 6* for two-way stop-controlled intersections.

Based on the HCM operations method of analysis, level of service for signalized intersections and approaches is defined in terms of control delay, which is a measure of the increase in travel time due to traffic signal control, driver discomfort, and fuel consumption. Control delay includes the delay associated with vehicles slowing in advance of an intersection, the time spent stopped on an intersection approach, the time spent as vehicles move up in the queue, and the time needed for vehicles to accelerate to their desired speed. LOS criteria for traffic signals are stated in terms of the control delay in seconds per vehicle. The LOS thresholds established for the automobile mode at a signalized intersection are shown in ***Table 3-2***.

3.5.3 *Highway Capacity Manual (HCM) Method of Analysis (Unsignalized Intersections)*

The HCM unsignalized methodology for stop-controlled intersections was utilized for the analysis of the unsignalized intersections. LOS criteria for unsignalized intersections differ from LOS criteria for signalized intersections as signalized intersections are designed for heavier traffic and therefore a greater delay. Unsignalized intersections are also associated with more uncertainty for users, as delays are less predictable, which can reduce users' delay tolerance.

Two-way stop-controlled intersections are comprised of a major street, which is uncontrolled, and a minor street, which is controlled by stop signs. Level of service for a two-way stop-controlled intersection is determined by the computed or measured control delay. The control delay by movement, by approach, and for the intersection as a whole is estimated by the computed capacity for each movement. LOS is determined for each minor-street movement (or shared movement) as well as major-street left turns. The worst side street approach delay is reported. LOS is not defined for the intersection as a whole or for major-street approaches, as it is assumed that major-street through vehicles experience zero delay. The HCM control delay value range for two-way stop-controlled intersections is shown in ***Table 3-3***.

3.6 Level of Service Criteria

According to City of Brea and City of Fullerton, LOS D is the minimum acceptable condition that should be maintained during the morning and evening peak commute hours at intersections.

The City of La Habra has also established LOS D as its criterion for an acceptable level of service at City jurisdiction intersections. For intersections located along a Congestion Management Plan (CMP) network, LOS E is considered acceptable within the City of La Habra. However, LOS D is considered to be the acceptable level of service at all La Habra locations in order to be conservative.

Caltrans "endeavors to maintain a target LOS at the transition between LOS "C" and LOS "D" on State highway facilities"; it does not require that LOS "D" (shall) be maintained. However, Caltrans

acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. Caltrans has determined that all state owned facilities that operate below LOS D should be identified and improved to an acceptable LOS. The *Caltrans Traffic Impact Study Guidelines dated December 2002* does state that if an existing state owned facility operates at less than LOS D, the existing service level should be maintained. At locations within the City of Brea but under the jurisdiction of Caltrans (i.e. study locations located along Imperial (SR-90) Highway), inclusive of the ramp intersections at the SR-57 Freeway/Lambert Road Interchange and SR-57 Freeway/Imperial Highway Interchange, Caltrans LOS standards would apply. Based on the above, LOS D is the acceptable condition that should be maintained for all key study intersections during the morning and evening peak commute hours with the exception of those within the City of La Habra where LOS E is defined in the CMP for Orange County as the acceptable limit.

TABLE 3-1

LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS (ICU METHODOLOGY)

Level of Service (LOS)	Intersection Capacity Utilization Value (V/C)	Level of Service Description
A	≤ 0.600	EXCELLENT. No vehicle waits longer than one red light, and no approach phase is fully used.
B	0.601 – 0.700	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles.
C	0.701 – 0.800	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	0.801 – 0.900	FAIR. Delays may be substantial during portions of the rush hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive backups.
E	0.901 – 1.000	POOR. Represents the most vehicles intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.
F	> 1.000	FAILURE. Backups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Potentially very long delays with continuously increasing queue lengths.

TABLE 3-2

LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS (HCM METHODOLOGY)[4]

Control Delay (sec/veh)	Level of Service (LOS)	Level of Service Description
≤ 10	A	This level of service occurs when the v/c ratio is low and either progression is exceptionally favorable or the cycle length is very short.
> 10-20	B	This level generally occurs when the v/c ratio is low and either progression is highly favorable or the cycle length is short.
> 20-35	C	Average traffic delays. These higher delays may result when progression is favorable or the cycle length is moderate. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping.
> 35-55	D	Long traffic delays. At level D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high *v/c* ratios. Many vehicles stop and individual cycle failures are noticeable.
> 55-80	E	Very long traffic delays. This level is considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high *v/c* ratios. Individual cycle failures are frequent.
> 80	F	Severe congestion. This level, considered to be unacceptable to most drivers, often occurs with over saturation, that is, when arrival flow rates exceed the capacity of the intersection. It may also occur at high *v/c* ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing factors to such delay levels.

[4] Source: *Highway Capacity Manual*, Chapter 18: Signalized Intersections.

TABLE 3-3

LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS (HCM METHODOLOGY)[5]

Control Delay (sec/veh)	Level of Service (LOS)	Level of Service Description
0-10	A	Little or no delay
> 10-15	B	Short traffic delays
> 15-20	C	Average traffic delays
> 25-35	D	Long traffic delays
> 35-50	E	Very long traffic delays
> 50	F	Severe congestion

[5] Source: *Highway Capacity Manual*, Chapter 19: Two-Way Stop-Controlled Intersections. The LOS criteria apply to each lane on a given approach and to each approach on the minor street. LOS is not calculated for major-street approaches or for the intersection as a whole.

3.7 Existing Level of Service Results

3.7.1 *Existing Conditions Intersection Capacity Analysis (ICU Methodology)*

Table 3-4 summarizes the existing Weekday AM, Weekday PM, and Weekend (Saturday) Midday peak hour service level calculations for the eighteen (18) key study intersections evaluated under ICU analysis based on existing traffic volumes and current street geometrics. Review of *Table 3-4* indicates that the intersection of State College Boulevard at Imperial Highway currently operates at unacceptable LOS during the Weekend (Saturday) Midday peak hour. The remaining seventeen (17) key study intersections currently operate an acceptable service levels during the Weekday AM, Weekday PM, and Weekend (Saturday) Midday peak hours.

Appendix C presents the ICU LOS calculation worksheets for the eighteen (18) key study intersections for the Weekday AM peak hour, Weekday PM peak hour, and Weekend (Saturday) Midday peak hours.

3.7.2 *Existing Conditions Intersection Capacity Analysis (HCM Methodology)*

Table 3-4 summarize the existing peak hour service level calculations for the eighteen (18) key study intersections evaluated during the Weekday AM, Weekday PM, and Weekend (Saturday) Midday peak hours based on existing traffic volumes and current street geometrics based on the HCM Method of Analysis. Review of *Table 3-4* indicates that the intersection of State College Boulevard at Imperial Highway currently operates an unacceptable LOS during the Weekday PM and Weekend (Saturday) Midday peak hours. The remaining seventeen (17) key study intersections currently operate an acceptable service levels during the Weekday AM, Weekday PM, and Weekend (Saturday) Midday peak hours.

Appendix D presents the HCM LOS calculation worksheets for the eight (18) key study intersections for the Weekday AM peak hour, Weekday PM peak hour, and Weekend (Saturday) Midday peak hours.

TABLE 3-4
EXISTING PEAK HOUR INTERSECTION CAPACITY ANALYSIS - ICU

Study Intersection	Jurisdiction	Minimum Acceptable LOS	Control Type	Time Period	ICU	LOS
1. State College Boulevard at Lambert Road	Brea	D	8∅ Traffic Signal	AM	0.703	C
				PM	0.676	B
				Sat MD	0.679	B
2. SR-57 SB Ramps at Lambert Road	Brea/ Caltrans	D	3∅ Traffic Signal	AM	0.749	C
				PM	0.614	B
				Sat MD	0.730	C
3. SR-57 NB Ramps at Lambert Road	Brea/ Caltrans	D	3∅ Traffic Signal	AM	0.820	D
				PM	0.568	A
				Sat MD	0.686	B
4. Randolph Avenue at Birch Street	Brea	D	5∅ Traffic Signal	AM	0.352	A
				PM	0.566	A
				Sat MD	0.468	A
5. State College Boulevard at Birch Street[6]	Brea	D	8∅ Traffic Signal	AM	0.529	A
				PM	0.673	B
				Sat MD	0.633	B
6. S Associated Road at Birch Street	Brea	D	6∅ Traffic Signal	AM	0.619	B
				PM	0.619	B
				Sat MD	0.514	A
7. Randolph Avenue at Madison Way	Brea	D	5∅ Traffic Signal	AM	0.139	A
				PM	0.243	A
				Sat MD	0.291	A
8. Randolph Avenue at Brea Mall	Brea	D	6∅ Traffic Signal	AM	0.136	A
				PM	0.358	A
				Sat MD	0.449	A
9. Brea Mall South at State College Boulevard	Brea	D	6∅ Traffic Signal	AM	0.183	A
				PM	0.442	A
				Sat MD	0.588	A
10. Harbor Boulevard at Imperial Highway	La Habra/ Fullerton/ Caltrans	D[7]	8∅ Traffic Signal	AM	0.790	C
				PM	0.770	C
				Sat MD	0.681	B

[6] It should be noted the southbound approach at the intersection has recently been widened to accommodate an exclusive right-turn lane. The level of service analysis presented in this report does not include this recent improvement, however, it is anticipated that the intersection would continue to operate at similar, if not better, service levels as presented herein with the inclusion of the southbound right-turn lane.

[7] According to City of La Habra guidelines, LOS E is acceptable at this location but is shown as LOS D to be conservative.

TABLE 3-4 (CONTINUED)
EXISTING PEAK HOUR INTERSECTION CAPACITY ANALYSIS - ICU

Study Intersection	Jurisdiction	Minimum Acceptable LOS	Control Type	Time Period	ICU	LOS
11. Puente Street at Imperial Highway	Brea/ Fullerton/ Caltrans	D	5∅ Traffic Signal	AM	0.573	A
				PM	0.589	A
				Sat MD	0.477	A
12. Brea Boulevard at Imperial Highway	Brea/ Caltrans	D	8∅ Traffic Signal	AM	0.787	C
				PM	0.773	C
				Sat MD	0.779	C
13. Randolph Avenue at Imperial Highway	Brea/ Caltrans	D	6∅ Traffic Signal	AM	0.420	A
				PM	0.647	B
				Sat MD	0.720	C
14. State College Boulevard at Imperial Highway	Brea/ Caltrans	D	8∅ Traffic Signal	AM	0.701	C
				PM	0.862	D
				Sat MD	**1.092**	**F**
15. SR-57 SB Ramps at Imperial Highway	Brea/ Caltrans	D	2∅ Traffic Signal	AM	0.575	A
				PM	0.705	C
				Sat MD	0.779	C
16. SR-57 NB Ramps at Imperial Highway	Brea/ Caltrans	D	4∅ Traffic Signal	AM	0.570	A
				PM	0.712	C
				Sat MD	0.831	D
17. Associated Road at Imperial Highway	Brea/ Caltrans	D	8∅ Traffic Signal	AM	0.704	C
				PM	0.780	C
				Sat MD	0.713	C
18. Castlegate Lane/Placentia Avenue at Imperial Highway	Brea/ Caltrans	D	6∅ Traffic Signal	AM	0.601	B
				PM	0.699	B
				Sat MD	0.675	B

Notes:

- **Bold ICU/LOS** values indicate adverse service levels based on the City LOS standards.

TABLE 3-5
EXISTING PEAK HOUR INTERSECTION CAPACITY ANALYSIS - HCM

	Study Intersection	Jurisdiction	Minimum Acceptable LOS	Control Type	Time Period	Delay (s/v)	LOS
1.	State College Boulevard at Lambert Road	Brea	D	8∅ Traffic Signal	AM	34.0	C
					PM	36.3	D
					Sat MD	35.7	D
2.	SR-57 SB Ramps at Lambert Road	Brea/ Caltrans	D	3∅ Traffic Signal	AM	27.1	C
					PM	19.5	B
					Sat MD	25.1	C
3.	SR-57 NB Ramps at Lambert Road	Brea/ Caltrans	D	3∅ Traffic Signal	AM	28.0	C
					PM	19.9	B
					Sat MD	24.9	C
4.	Randolph Avenue at Birch Street	Brea	D	5∅ Traffic Signal	AM	14.2	B
					PM	30.1	C
					Sat MD	20.0	C
5.	State College Boulevard at Birch Street[8]	Brea	D	8∅ Traffic Signal	AM	37.6	D
					PM	30.6	C
					Sat MD	37.3	D
6.	S Associated Road at Birch Street	Brea	D	6∅ Traffic Signal	AM	26.1	C
					PM	25.6	C
					Sat MD	22.3	C
7.	Randolph Avenue at Madison Way	Brea	D	5∅ Traffic Signal	AM	17.3	B
					PM	19.0	B
					Sat MD	20.5	C
8.	Randolph Avenue at Brea Mall	Brea	D	6∅ Traffic Signal	AM	8.2	A
					PM	18.3	B
					Sat MD	22.7	C
9.	Brea Mall South at State College Boulevard	Brea	D	6∅ Traffic Signal	AM	15.6	B
					PM	30.7	C
					Sat MD	32.8	C
10.	Harbor Boulevard at Imperial Highway	La Habra/ Fullerton/ Caltrans	D[9]	8∅ Traffic Signal	AM	40.4	D
					PM	41.7	D
					Sat MD	38.7	D

[8] It should be noted the southbound approach at the intersection has recently been widened to accommodate an exclusive right-turn lane. The level of service analysis presented in this report does not include this recent improvement, however, it is anticipated that the intersection would continue to operate at similar, if not better, service levels as presented herein with the inclusion of the southbound right-turn lane.

[9] According to City of La Habra guidelines, LOS E is acceptable at this location but is shown as LOS D to be conservative.

TABLE 3-5 (CONTINUED)
EXISTING PEAK HOUR INTERSECTION CAPACITY ANALYSIS - HCM

Study Intersection	Jurisdiction	Minimum Acceptable LOS	Control Type	Time Period	Delay (s/v)	LOS
11. Puente Street at Imperial Highway	Brea/ Fullerton/ Caltrans	D	5∅ Traffic Signal	AM	18.1	B
				PM	18.5	B
				Sat MD	13.0	B
12. Brea Boulevard at Imperial Highway	Brea/ Caltrans	D	8∅ Traffic Signal	AM	40.2	D
				PM	37.5	D
				Sat MD	40.3	D
13. Randolph Avenue at Imperial Highway	Brea/ Caltrans	D	6∅ Traffic Signal	AM	12.4	B
				PM	23.4	C
				Sat MD	36.2	D
14. State College Boulevard at Imperial Highway	Brea/ Caltrans	D	8∅ Traffic Signal	AM	30.4	C
				PM	**56.0**	**E**
				Sat MD	**112.0**	**F**
15. SR-57 SB Ramps at Imperial Highway	Brea/ Caltrans	D	2∅ Traffic Signal	AM	15.3	B
				PM	15.9	B
				Sat MD	17.5	B
16. SR-57 NB Ramps at Imperial Highway	Brea/ Caltrans	D	4∅ Traffic Signal	AM	21.2	C
				PM	22.5	C
				Sat MD	36.5	D
17. Associated Road at Imperial Highway	Brea/ Caltrans	D	8∅ Traffic Signal	AM	27.2	C
				PM	40.7	D
				Sat MD	34.5	C
18. Castlegate Lane/Placentia Avenue at Imperial Highway	Brea/ Caltrans	D	6∅ Traffic Signal	AM	18.1	B
				PM	24.0	C
				Sat MD	20.8	C

Notes:

- **Bold HCM/LOS** values indicate adverse service levels based on the City LOS standards.
- s/v = seconds per vehicle (delay)

4.0 TRAFFIC FORECASTING METHODOLOGY

In order to estimate the traffic characteristics of the proposed Project, a multi-step process has been utilized. The first step is traffic generation, which estimates the total arriving and departing traffic on a peak hour and daily basis. The traffic generation potential is forecast by applying the appropriate vehicle trip generation equations or rates to the project development tabulation.

The second step of the forecasting process is traffic distribution, which identifies the origins and destinations of inbound and outbound project traffic. These origins and destinations are typically based on demographics and existing/expected future travel patterns in the study area.

The third step is traffic assignment, which involves the allocation of project traffic to study area streets and intersections. Traffic assignment is typically based on minimization of travel time, which may or may not involve the shortest route, depending on prevailing operating conditions and travel speeds. Traffic distribution patterns are indicated by general percentage orientation, while traffic assignment allocates specific volume forecasts to individual roadway links and intersection turning movements throughout the study area.

With the forecasting process complete and project traffic assignments developed, the proposed project is isolated by comparing operational (LOS) conditions at selected study intersections using expected future traffic volumes with and without forecast project traffic. The need for site-specific and/or cumulative local area traffic improvements can then be evaluated.

5.0 PROJECT TRAFFIC CHARACTERISTICS

5.1 Project Traffic Generation

Traffic generation is expressed in vehicle trip ends, defined as one-way vehicular movements, either entering or exiting the generating land use. Generation equations and/or rates used in the traffic forecasting procedure are found in the 10th Edition of *Trip Generation*, published by the Institute of Transportation Engineers (ITE) [Washington D.C., 2017] and empirical trip generation rates developed from studies of existing Lifetime Fitness facilities.

Table 5-1 summarizes the trip generation rates used in forecasting the vehicular trips generated by the proposed Project and also presents the project's forecast peak hour and daily traffic volumes. As shown in the upper portion of *Table 5-1,* ITE Land Use 221: Multifamily Housing (Mid-Rise) trip rates and ITE Land Use 820: Shopping Center equations, and empirical rates from existing Lifetime Fitness facilities will be used to forecast the trip generation potential of a fully occupied existing Brea Mall and site, as well as the Project.

It should be noted that traffic patterns near Malls vary by time of year (i.e. holiday seasons). However, standard engineering practice consist of forecasting trips during a "typical" weekday and "typical" Saturday periods (non-holiday season). Therefore, this standard practice has been applied in this report. It is very common for large shopping centers to have parking management plans in place to manage peak seasonal demands that are specific to its needs. It is anticipated that the current practices of the Brea Mall as it relates to seasonal peaks will continue to apply and/or be adjusted accordingly.

A review of the middle portion of *Table 5-1* indicates that a fully occupied Brea Mall (including the currently vacant second story of Sears) (Row B) is forecast to generate approximately 30,817 Weekday daily trips, with 757 trips (469 inbound, 288 outbound) produced in the Weekday AM peak hour and 3,247 trips (1,559 inbound, 1,688 outbound) produced in the Weekday PM peak hour on a "typical" weekday. A fully occupied Brea Mall is forecast to generate 39,183 Saturday daily trips, with 4,204 trips (2,186 inbound, 2,018 outbound) produced in the Saturday Midday peak hour on a "typical" Saturday.

The lower portion of *Table 5-1* presents the trip generation associated with the existing occupied Brea Mall and the additional proposed Project uses (Row C). A review of lower portion of this table indicates that the proposed Project with the existing Brea Mall is forecast to generate approximately 33,976 Weekday daily trips, with 1,067 trips (622 inbound, 445 outbound) produced in the Weekday AM peak hour and 3,556 trips (1,789 inbound, 1,767 outbound) produced in the Weekday PM peak hour on a "typical" weekday. The proposed Project with the existing Brea Mall is forecast to generate 42,060 Saturday daily trips, with 4,484 trips (2,274 inbound, 2,210 outbound) produced in the Saturday Midday peak hour on a "typical" Saturday.

When the proposed Project is compared to an existing fully occupied Brea Mall site, the proposed Project is forecast to generate 3,159 more Weekday daily trips, 310 more Weekday AM peak hour trips, 309 more Weekday PM peak hour trips, 2,877 more Saturday daily trips, and 280 more

Saturday Midday peak hour trips. The potential implications of these added Project trips to the local area roadway network has been evaluated in this traffic analysis.

5.2 Project Traffic Distribution and Assignment

Figures 5-1 and ***5-2*** presents the Project Trip Distribution for the commercial and residential components, respectively. The Project Trip Distribution for the retail and residential components have been distributed and assigned to the adjacent street system based on Project Select Zone model runs and have been further refined based on the following considerations:

- Recognition that the Brea Mall draws traffic from the surrounding region, and is not just a local area attraction.
- location of site access points in relation to the surrounding street system,
- the site's immediate proximity to major traffic carriers and regional access routes, such as the SR-57 Freeway and SR-90 (Imperial Highway),
- physical characteristics of the circulation system such as lane channelization and presence of traffic signals that affect travel patterns,
- presence of traffic congestion in the surrounding vicinity,
- ingress/egress availability at the project site, and
- input by City Staff.

It should be noted that Project traffic has been distributed to the Brea Mall's existing site access intersections of Randolph Avenue at Brea Mall and Brea Mall South at State College Boulevard due to the location of the proposed Project in the southwest portion of the Brea Mall site. From a review of *Figure 5-1,* approximately 36% and 64% of the Project's new commercial traffic is forecast to utilize Randolph Avenue at Brea Mall and Brea Mall South at State College Boulevard, respectively, As shown in *Figure 5-2,* approximately 83% and 17% of the Project's residential traffic utilize Randolph Avenue at Brea Mall and Brea Mall South at State College Boulevard, respectively,

The anticipated weekday AM and PM peak hour and weekend (Saturday) midday peak hour project traffic volumes associated with the proposed Project are presented in ***Figures 5-3, 5-4*** and ***5-5***, respectively. *Figures 5-4* and *5-5* also present the weekday and weekend daily Project traffic volumes, respectively. The traffic volume assignments presented in *Figures 5-3, 5-4* and *5-5* reflect the traffic distribution characteristics shown in *Figures 5-1* and *5-2* and the traffic generation forecast presented in *Table 5-1.*

TABLE 5-1

PROJECT TRAFFIC GENERATION RATES AND FORECAST[10]

ITE Land Use Code/ Project Description	Weekday							Saturday			
	Daily	AM Peak Hour			PM Peak Hour			Daily	MD Peak Hour		
	2-Way	Enter	Exit	Total	Enter	Exit	Total	2-Way	Enter	Exit	Total
Trip Generation Factors:											
• 221: Multifamily Housing (Mid-Rise) (TE/DU) [11]	5.44	26%	74%	0.36	61%	39%	0.44	4.91	49%	51%	0.44
• 820: Shopping Center (TE/TSF GLA)	Eq. [12]	62%	38%	Eq.[12]	48%	52%	Eq. [12]	Eq. [12]	52%	48%	Eq. [12]
• Health Club (TE/TSF) [13]	27.44	1.02	0.51	1.53	1.85	0.97	2.83	26.35	1.04	1.79	2.83
[A] Existing Occupied Brea Mall:											
• Existing Shopping Center (1,210,438 SF)	32,766	469	288	757	1,651	1,788	3,439	41,824	2,308	2,130	4,438
Pass-by Reduction[14]	-3,277	-23	-15	-38	-165	-179	-344	-4,182	-231	-213	-444
Existing Occupied Brea Mall Subtotal	***29,489***	***446***	***273***	***719***	***1,486***	***1,609***	***3,095***	***37,642***	***2,077***	***1,917***	***3,994***
[B] Existing Occupied Brea Mall + Vacancy:											
• Fully Occupied Shopping Center (1,291,433 SF)[15]	34,241	494	303	797	1,732	1,876	3,608	43,537	2,429	2,242	4,671
Pass-by Reduction[14]	-3,424	-25	-15	-40	-173	-188	-361	-4,354	-243	-224	-467
Fully Occupied Brea Mall Total	***30,817***	***469***	***288***	***757***	***1,559***	***1,688***	***3,247***	***39,183***	***2,186***	***2,018***	***4,204***
[C] Existing Occupied Brea Mall + Proposed Project:											
• Proposed Shopping Center (1,248,858 SF)[16]	33,469	481	295	776	1,690	1,830	3,520	42,642	2,365	2,184	4,549
Internal Capture[17]	-917	-1	-1	-2	-28	-47	-75	-827	-36	-38	-74
Proposed Shopping Center Subtotal	*32,552*	*480*	*294*	*774*	*1,662*	*1,783*	*3,445*	*41,815*	*2,329*	*2,146*	*4,475*
Pass-by Reduction[14]	-3,255	-24	-15	-39	-166	-179	-345	-4,182	-233	-215	-448
Proposed Shopping Center Subtotal	*29,297*	*456*	*279*	*735*	*1,496*	*1,604*	*3,100*	*37,633*	*2,096*	*1,931*	*4,027*
• Proposed Health Club (128,000 SF)	3,512	131	65	196	237	125	362	3,373	133	229	362
• Proposed Residential (383 DU)	2,084	36	102	138	103	66	169	1,881	83	86	169
Internal Capture[17]	-917	-1	-1	-2	-47	-28	-75	-827	-38	-36	-74
Proposed Residential Subtotal	*1,167*	*35*	*101*	*136*	*56*	*38*	*94*	*1,054*	*45*	*50*	*95*
[C] Existing Occupied Brea Mall + Proposed Project Total	***33,976***	***622***	***445***	***1,067***	***1,789***	***1,767***	***3,556***	***42,060***	***2,274***	***2,210***	***4,484***
[D] Net Trip Generation [C] (Existing Occupied Brea Mall + Proposed Project) – [B] (Existing Occupied Brea Mall + Vacancy)	**3,159**	**153**	**157**	**310**	**230**	**79**	**309**	**2,877**	**88**	**192**	**280**

Notes:
TE/DU = Trip End per Dwelling Unit
TE/TSF GLA = Trip End per Thousand Square Feet Gross Leasable Area
TE/TSF = Trip End per Thousand Square Feet

10 Source: *Trip Generation*, 10th Edition, Institute of Transportation Engineers (ITE), Washington, D.C. (2017).

11 Mid-Rise Multifamily Housing consists of buildings that are between 3 and 10 levels.

12 Trip Generation rates based on the following equations:
- Weekday Daily: Ln(T) = 0.68Ln(X) + 5.57
- Weekday AM Peak Hour: T = 0.50(X) + 151.78
- Weekday PM Peak Hour: Ln(T) = 0.74Ln(X) + 2.89
- Saturday Daily: Ln(T) = 0.62Ln(X) + 6.24
- Saturday Peak Hour of Generator: Ln(T) = 0.79Ln(X) + 2.79

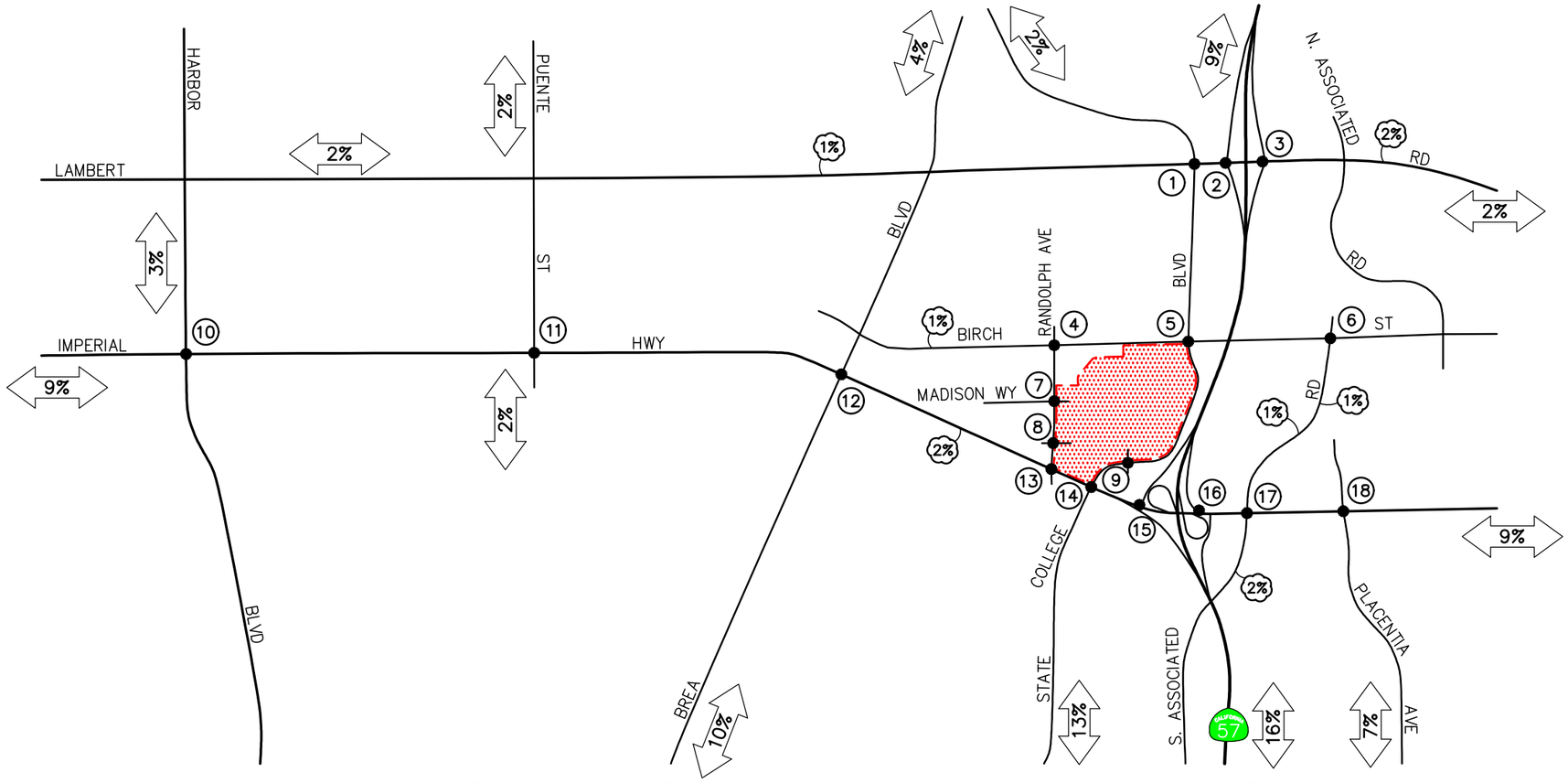
13 Source: *Northshore Mall Redevelopment Traffic Impact and Access Study,* prepared by vhb, dated April 2018. As there is no Sunday Daily and Sunday Midday peak hour empirical rates available, Saturday Daily and Saturday Midday peak hour empirical rates have been applied.

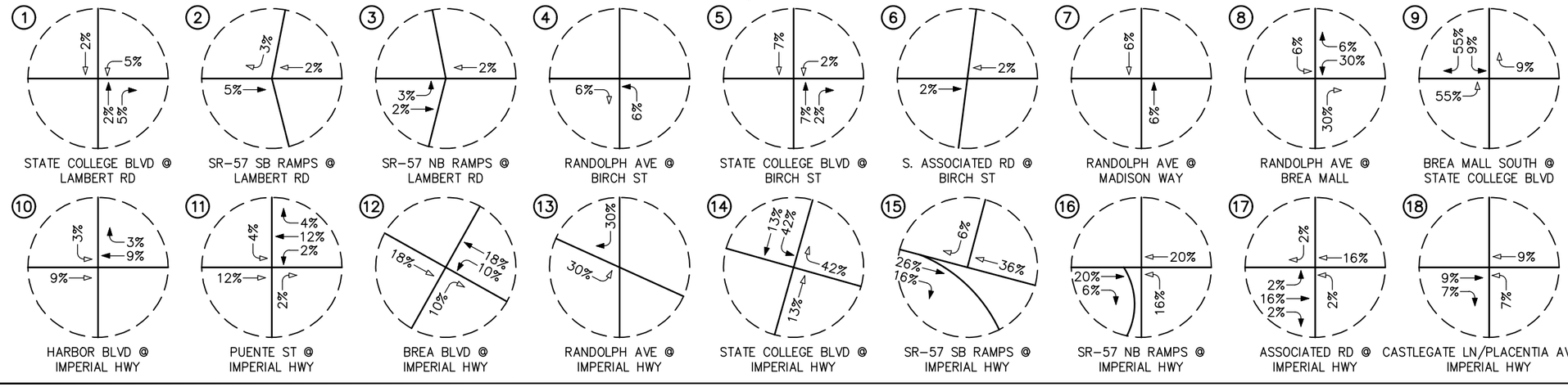
14 The pass-by trip reductions applied to retail trips are 10% for Weekday Daily, 5% for Weekday AM peak hour, 10% for Weekday PM peak hour, 10% for Saturday Daily, 10% for Saturday Midday peak hour, 10% for Sunday Daily, and 10% for Sunday Midday peak hour.

15 The fully occupied Brea Mall includes the existing 1,210,438 SF of occupied mall and 80,995 SF of second floor Sears vacancy.

16 The proposed Brea Mall includes the existing 1,210,438 SF of occupied mall, 80,995 SF of the occupied first floor of the Sears building to be demolished, and 119,415 SF of additional commercial.

17 Consistent with the *Trip Generation Handbook,* published by ITE (2017), Project trip generation was adjusted to account for internal capture between the retail and residential components of the Project. As there is no Saturday or Sunday internal capture worksheets available, Weekday Daily and Weekday PM peak hour calculations have been applied to Saturday Daily, Saturday Midday peak hour, Sunday Daily, and Sunday Midday peak hour.





LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

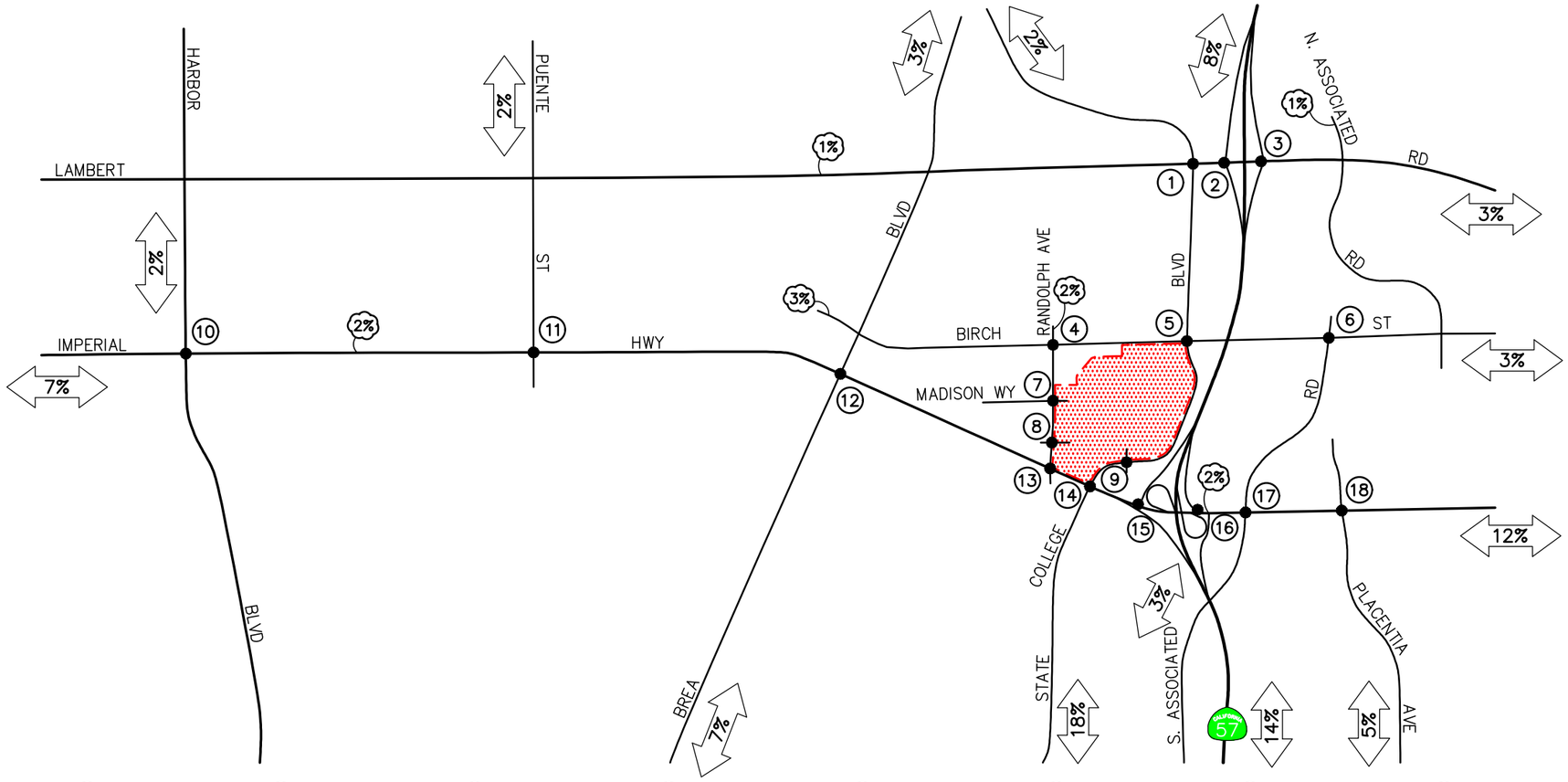
(#) = STUDY INTERSECTION
⇦ = INBOUND PERCENTAGE
⇦ = OUTBOUND PERCENTAGE
▭ = PROJECT SITE

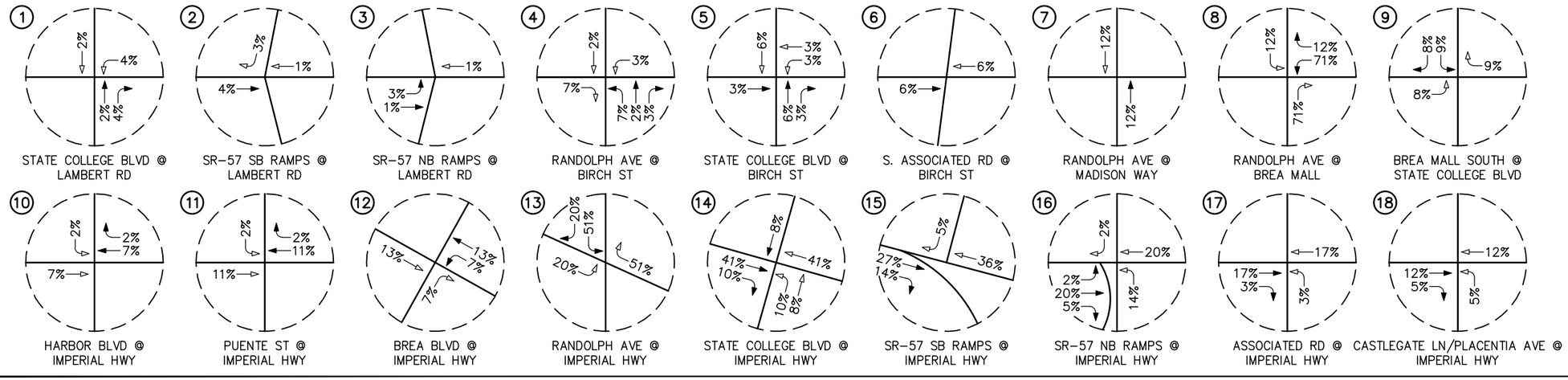
FIGURE 5-1

PROJECT TRIP DISTIBUTION – COMMERCIAL

BREA MALL MIXED-USE PROJECT, BREA

n:\4000\2194099 - brea mall expansion & improvement, brea\dwg\4099 f5-1a.dwg LDP 13:35:07 04-12-2022 kopulsky





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LINSCOTT LAW & GREENSPAN engineers

NO SCALE

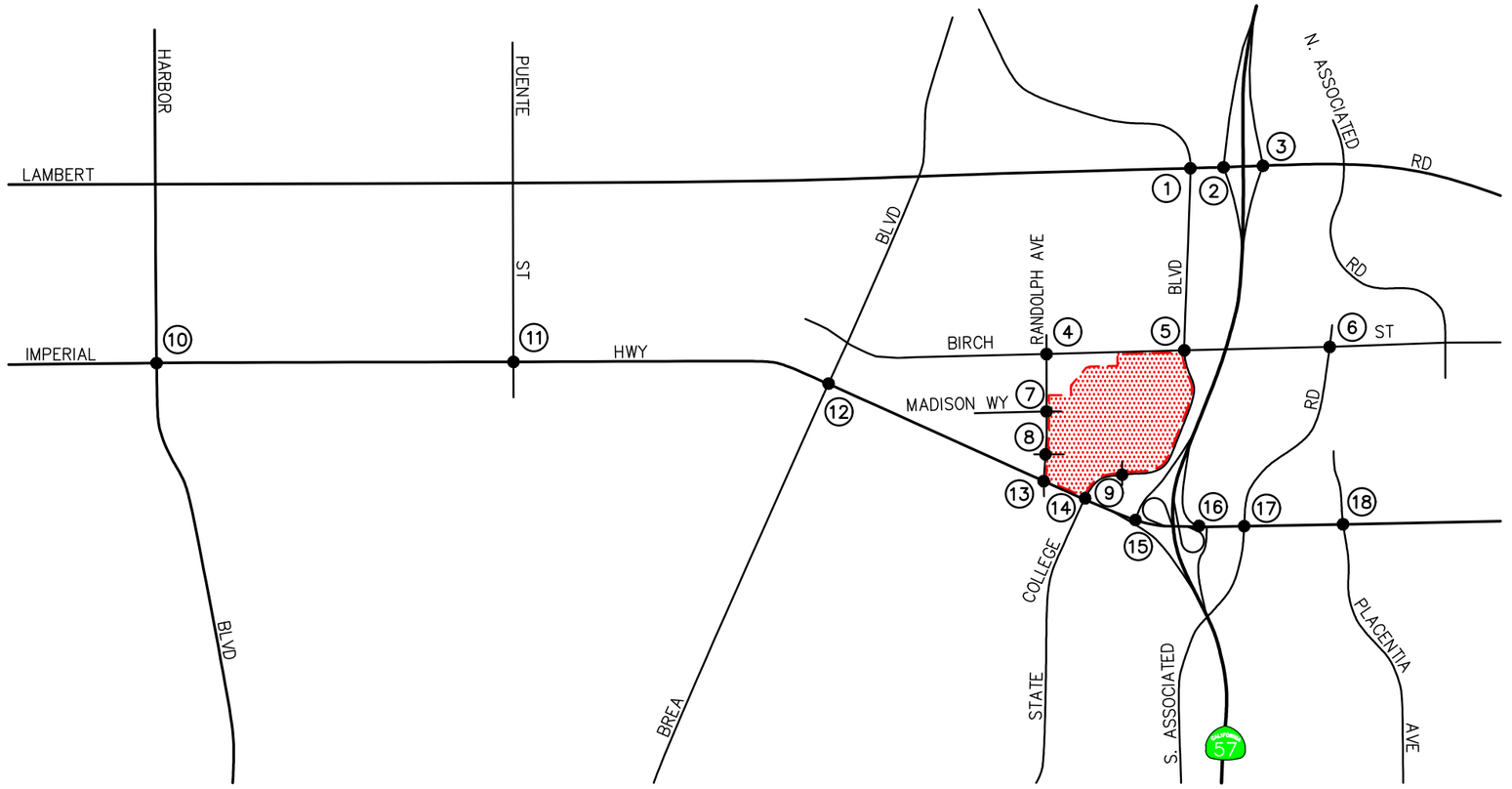
KEY

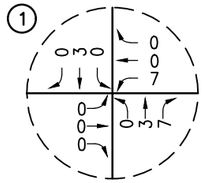
(#) = STUDY INTERSECTION
⇦ = INBOUND PERCENTAGE
⇦ = OUTBOUND PERCENTAGE
= PROJECT SITE

FIGURE 5-2

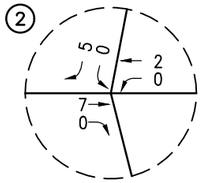
PROJECT TRIP DISTIBUTION – RESIDENTIAL

BREA MALL MIXED-USE PROJECT, BREA

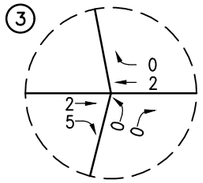




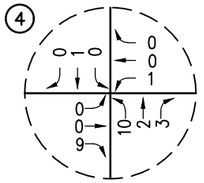
STATE COLLEGE BLVD @ LAMBERT RD



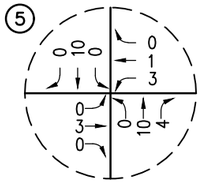
SR-57 SB RAMPS @ LAMBERT RD



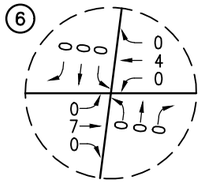
SR-57 NB RAMPS @ LAMBERT RD



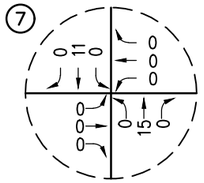
RANDOLPH AVE @ BIRCH ST



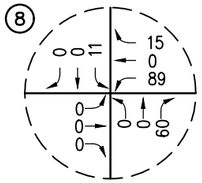
STATE COLLEGE BLVD @ BIRCH ST



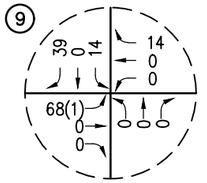
S. ASSOCIATED RD @ BIRCH ST



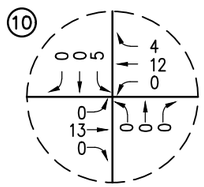
RANDOLPH AVE @ MADISON WAY



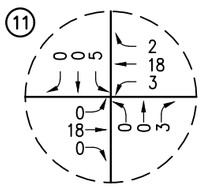
RANDOLPH AVE @ BREA MALL



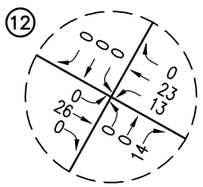
BREA MALL SOUTH @ STATE COLLEGE BLVD



HARBOR BLVD @ IMPERIAL HWY



PUENTE ST @ IMPERIAL HWY



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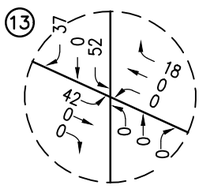
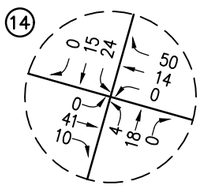
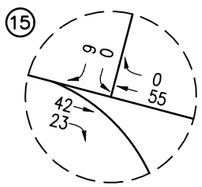


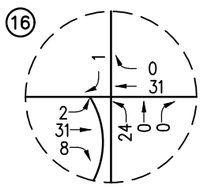
RANDOLPH AVE @ IMPERIAL HWY



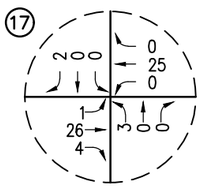
STATE COLLEGE BLVD @ IMPERIAL HWY



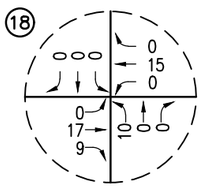
SR-57 SB RAMPS @ IMPERIAL HWY



SR-57 NB RAMPS @ IMPERIAL HWY



ASSOCIATED RD @ IMPERIAL HWY



CASTLEGATE LN/PLACENTIA AVE @ IMPERIAL HWY

LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

(#) = STUDY INTERSECTION

= BREA MALL

(XX) = PASSBY TRIPS

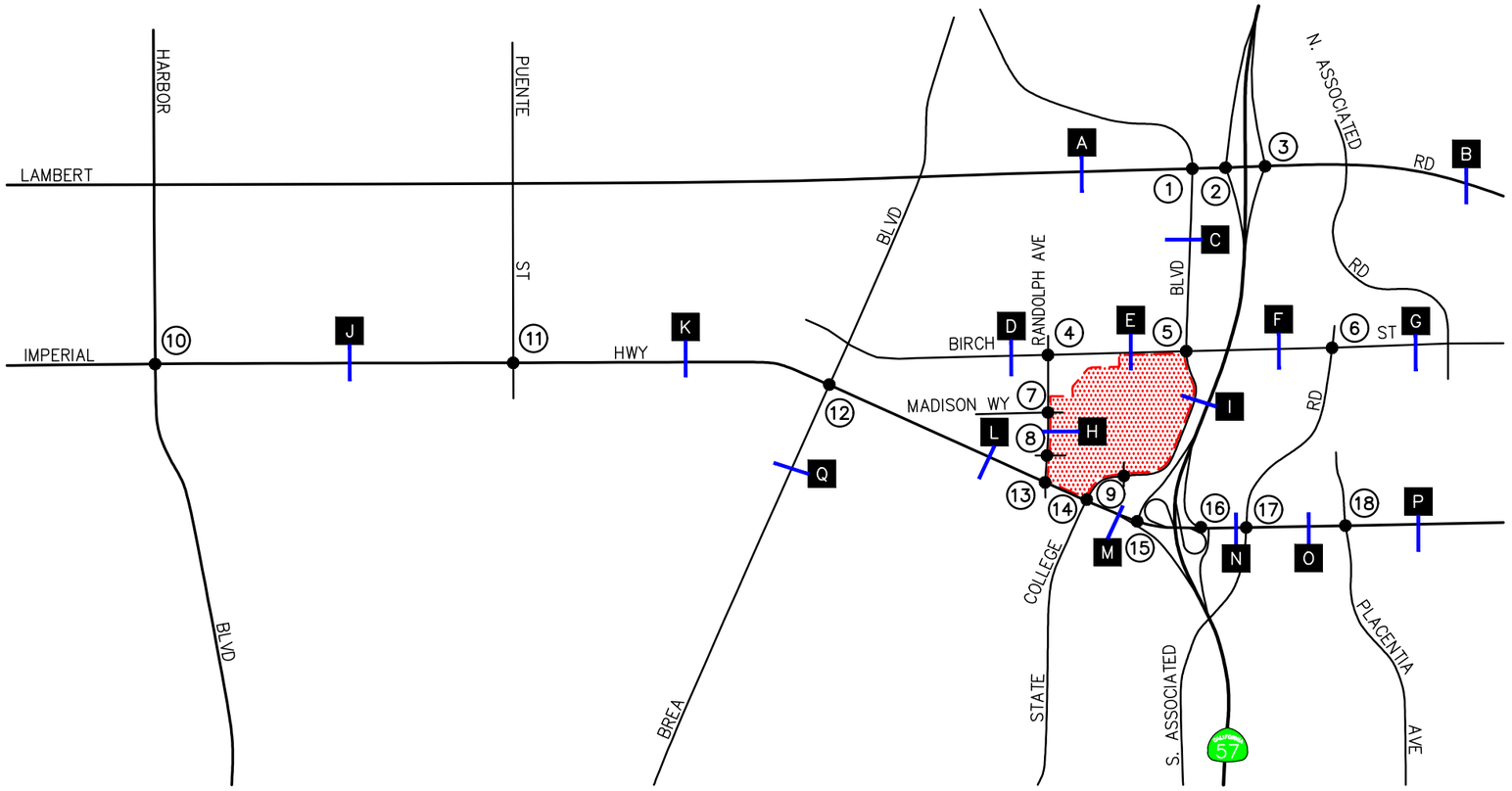
FIGURE 5-3

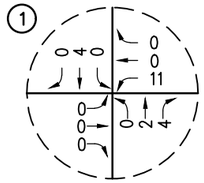
WEEKDAY AM PEAK HOUR PROJECT TRAFFIC VOLUMES

BREA MALL EXPANSION & IMPORVEMENTS, BREA

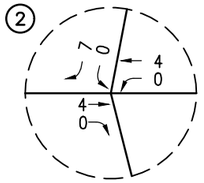
n:\4000\2194099 - brea mall expansion & improvement, brea\dwg\4099 prn base.dwg LDP 14:17:08 04-14-2022 kopulsky

LOCATION	VOLUME
A	*0*
B	*52*
C	*209*
D	*202*
E	*35*
F	*110*
G	*110*
H	*857*
I	*284*
J	*367*
K	*511*
L	*831*
M	*1,315*
N	*631*
O	*517*
P	*319*
Q	*281*

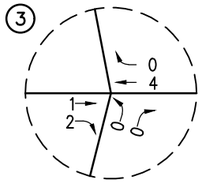




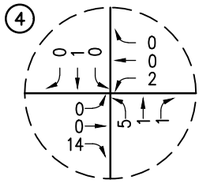
1 STATE COLLEGE BLVD @ LAMBERT RD



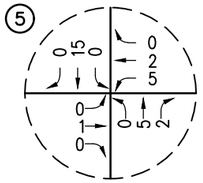
2 SR-57 SB RAMPS @ LAMBERT RD



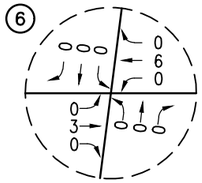
3 SR-57 NB RAMPS @ LAMBERT RD



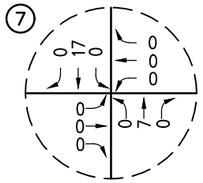
4 RANDOLPH AVE @ BIRCH ST



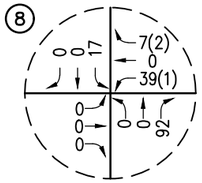
5 STATE COLLEGE BLVD @ BIRCH ST



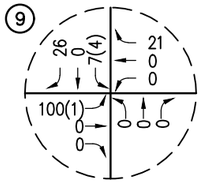
6 S. ASSOCIATED RD @ BIRCH ST



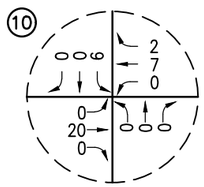
7 RANDOLPH AVE @ MADISON WAY



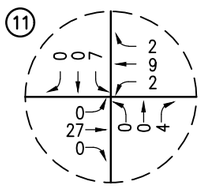
8 RANDOLPH AVE @ BREA MALL



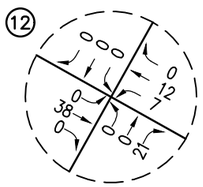
9 BREA MALL SOUTH @ STATE COLLEGE BLVD



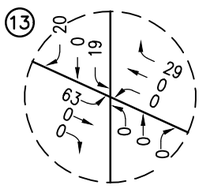
10 HARBOR BLVD @ IMPERIAL HWY



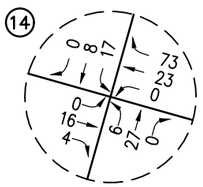
11 PUENTE ST @ IMPERIAL HWY



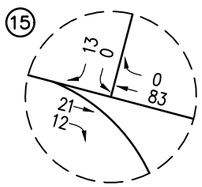
12 BREA BLVD @ IMPERIAL HWY



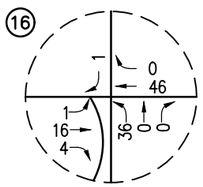
13 RANDOLPH AVE @ IMPERIAL HWY



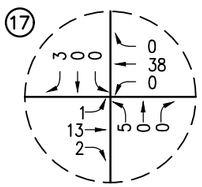
14 STATE COLLEGE BLVD @ IMPERIAL HWY



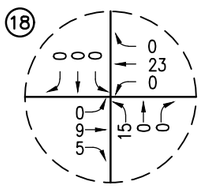
15 SR-57 SB RAMPS @ IMPERIAL HWY



16 SR-57 NB RAMPS @ IMPERIAL HWY



17 ASSOCIATED RD @ IMPERIAL HWY



18 CASTLEGATE LN/PLACENTIA AVE @ IMPERIAL HWY

LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

(#) = STUDY INTERSECTION

= STUDY ROADWAY SEGMENT

= BREA MALL

(XX) = PASSBY TRIPS

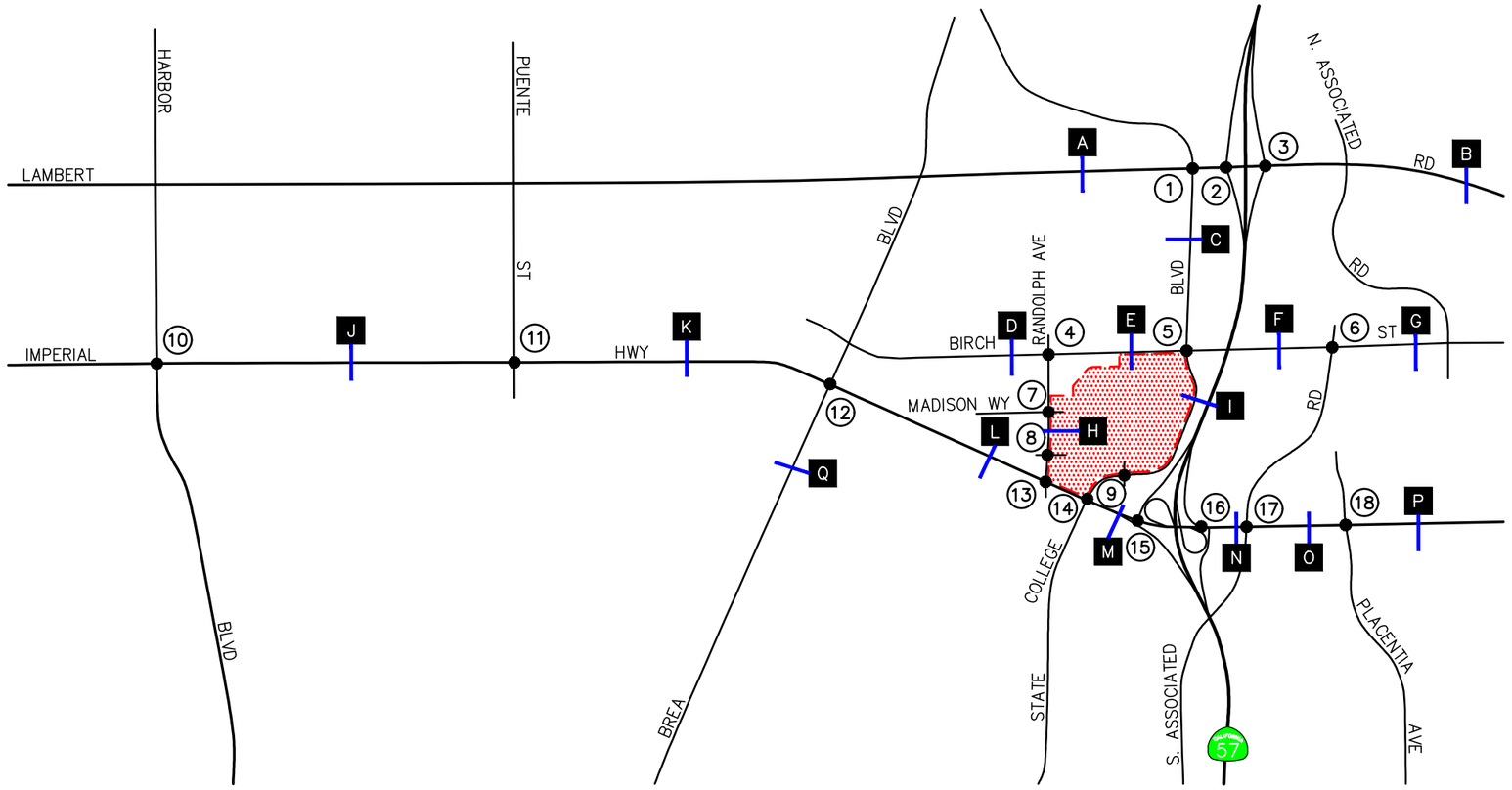
FIGURE 5-4

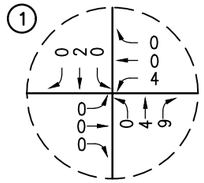
WEEKDAY PM PEAK HOUR AND DAILY PROJECT TRAFFIC VOLUMES

BREA MALL EXPANSION & IMPORVEMENTS, BREA

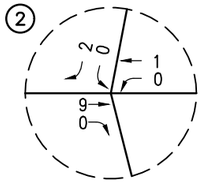
n:\4000\2194099 - brea mall expansion & improvement, brea\dwg\4099 prn base.dwg LDP 14:17:08 04-14-2022 kopulsky

LOCATION	VOLUME
A	*0*
B	*47*
C	*191*
D	*183*
E	*32*
F	*99*
G	*99*
H	*782*
I	*259*
J	*335*
K	*465*
L	*758*
M	*1,198*
N	*576*
O	*471*
P	*290*
Q	*256*

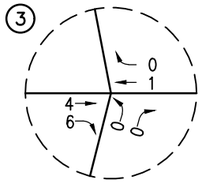




STATE COLLEGE BLVD @ LAMBERT RD



SR-57 SB RAMPS @ LAMBERT RD



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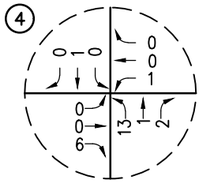

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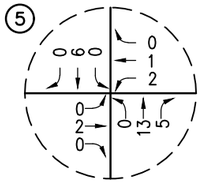
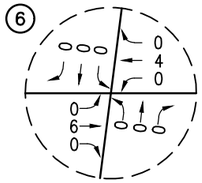


STATE COLLEGE BLVD @ BIRCH ST



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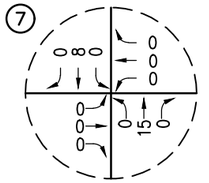

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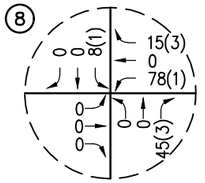

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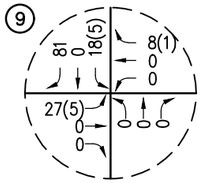
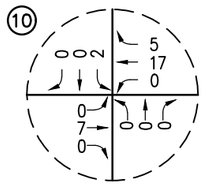


BREA MALL SOUTH @ STATE COLLEGE BLVD



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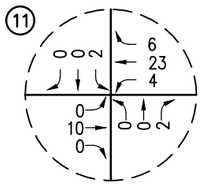

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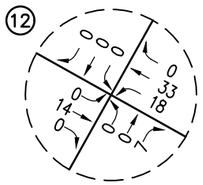

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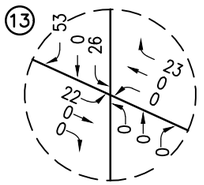

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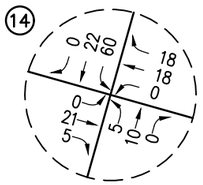

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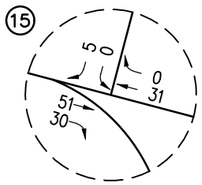

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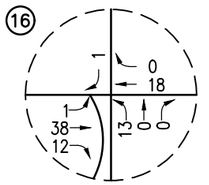

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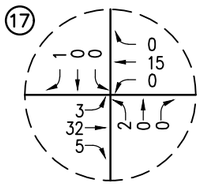

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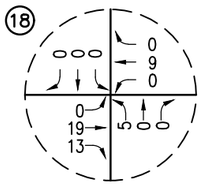

CASTLEGATE LN/PLACENTIA AVE @ IMPERIAL HWY

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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

(#) = STUDY INTERSECTION

= STUDY ROADWAY SEGMENT

= BREA MALL

FIGURE 5-5

WEEKEND (SATURDAY) MIDDAY PEAK HOUR AND DAILY PROJECT TRAFFIC VOLUMES

BREA MALL EXPANSION & IMPORVEMENTS, BREA

6.0 FUTURE TRAFFIC CONDITIONS

6.1 Ambient Traffic Growth

Horizon year, background traffic growth estimates have been calculated using an ambient traffic growth factor. The ambient traffic growth factor is intended to include unknown and future related projects in the study area, as well as account for regular growth in traffic volumes due to the development of projects outside the study area. The future growth in traffic volumes has been calculated at one percent (1.0%) per year. Applied to the Year 2022 existing baseline traffic conditions, this factor results in an 4.0% growth in existing volumes to the near-term year 2026.

6.2 Related Projects Traffic Characteristics

In order to make a realistic estimate of future on-street conditions prior to implementation of the proposed Project, the status of other known development projects (related projects) within the area of the proposed project has been researched at the City of Brea, City of Chino Hills, City of La Habra, and City of Fullerton. With this information, the potential implications of the proposed Project can be evaluated within the context of the cumulative setting of all ongoing development. Based on our research during the scoping process, there are twenty-three (23) related projects in the City of Brea, two (2) related projects in the City of Fullerton and seven (7) related projects in the City of Chino Hills that are being processed for approval. All of these related projects have been included as part of the cumulative background setting.

Table 6-1 provides a brief description for each of the thirty-two (32) related projects. ***Figure 6-1*** graphically illustrates the location of the thirty-two (32) related projects. These related projects are expected to generate vehicular traffic, which may affect the operating conditions of the key study intersections. In addition to the development projects noted in *Table 6-1*, roadway/interchange improvements associated with the SR-57 Lambert Interchange improvement project, now under construction, have been included in the Year 2026 and Year 2045 cumulative traffic conditions (See Section 11.0 for additional information).

Table 6-2 summarizes the trip generation potential for all thirty-two (32) related projects on a weekday daily and peak hour basis and on a weekend (Saturday) basis and midday peak hour. As shown, the related projects are expected to generate 38,681 weekday daily trips, with 2,992 trips (1,479 inbound, 1,513 outbound) anticipated during the weekday AM peak hour and 3,561 trips (1,786 inbound, 1,775 outbound) produced during the weekday PM peak hour. On a weekend (Saturday), the related projects are forecast to generate 38,164 weekend daily trips, with 3,909 trips (2,074 inbound, 1,835 outbound) anticipated during the weekend midday peak hour.

The weekday AM and PM peak hour traffic volumes associated with thirty-one (31) of the thirty-two (32) related projects in the Year 2026 are presented in ***Figures 6-2*** and ***6-3***, respectively, whereas the weekend (Saturday) midday peak hour traffic volumes are presented in ***Figure 6-4***. *Figures 6-3 and 6-4* also present the weekday and weekend daily related project traffic volumes. Per the direction of City staff the Brea 265 Specific Plan Project has been included as a related project as part of only Year 2045 background traffic conditions.

TABLE 6-1

LOCATION AND DESCRIPTION OF CUMULATIVE PROJECTS[18]

No.	Description	Location/Address	Size
City of Brea			
1.	CVS	390 N. Brea Boulevard	13,000 SF Pharmacy with Drive-Through, 1,700 SF Coffee Shop with Drive-through
2.	Brea Place	State College Boulevard at Birch Street	653 DU Apartments, 5,000 SF Office, 150 Room Hotel[19]
3.	Downtown Hotel	220 S. Brea Boulevard	116 Room Hotel, 4,000 SF High Turnover Sit Down Restaurant
4.	Mercury Apartments	Southeast corner of Berry Street at Mercury Lane	120 DU Apartments
5.	Brea 265 Specific Plan[20]	South of Lambert Road/Carbon Canyon Road, north of Rose Drive, east of Valencia Avenue and west of Carbon Canyon Regional Park	1,100 residential units, consisting of 450 single-family homes and 650 multi-family residential units, and a 13-acre sports park
6.	Brea Plaza	409-477 S. Associated Road and 1555, 1609, 1623, 1643 E. Imperial Highway	Demolition of an existing 18,450 SF movie theater and the construction of a mixed-use development with 21,355 SF of office space and 229[21] apartment units
7.	Central Park Village	340-420 W. Central Avenue	62 DU townhomes and 20 DU apartments[22]
8.	New Industrial Building	201 N. Berry Street	109,125 SF warehouse
9.	Alvero Assisted Living	251 S. Randolph Avenue	80 rooms with 82 beds residential care facility
10.	Extra Space Self Storage	2700 E. Imperial Highway	126,546 self-storage facility
11.	Brea Imperial Center	391 S. State College Boulevard	5,000 SF restaurant, 2,300 SF bagel/coffee shop, 1,600 SF café, 3,867 SF In-N-Out, 28,145 SF retail, and 4,400 SF bank to replace existing land uses which include 4,050 SF food uses, 24,481 SF retail, 4,400 SF bank, 2,325 SF medical office, 10,074 SF health studio spa.
12.	Transwestern	285 S. Berry Street and 711 W. Imperial Highway	126,797 SF warehouse
13.	The Phoenix Club	375 W. Central Avenue	8,350 SF restaurant with banquet hall
14.	Aldi Grocery Store	2395 E. Imperial Highway	21,106 SF grocery store
15.	Starbucks with Drive-Thru	2 Pointe Drive	2,400 SF coffee shop with drive-thru
16.	Lambert Road Condos	700-800 W. Lambert Road	24 DU condominiums

18 Source: City of Brea, Fullerton, and Chino Hills Planning Departments.

19 The traffic analysis conservatively evaluated 790 units as originally planned, which would result in higher traffic volumes in the cumulative scenarios.

20 Brea 265 Specific Plan Project has been included as a related project as part of Year 2045 background traffic conditions.

21 Fifteen (15) of the proposed apartments are considered co-living units, which include five (5) 3-bedroom units and ten (10) four-bedroom units, therefore, to provide a conservative assessment, the co-living unit bedrooms have been counted as individual units for a total apartment count of 229 units.

22 The project has already built and occupied 206 DU apartments and 83 DU townhomes.

TABLE 6-1(CONTINUED)
LOCATION AND DESCRIPTION OF CUMULATIVE PROJECTS[23]

No.	Description	Location/Address	Size
City of Brea (Continued)			
17.	Brea Metro Office Condos	330 E. Lambert Road	33 DU condominiums
18.	Father's House	245 W. Birch Street	299 seat religious assembly
19.	Cha Cha's Expansion	110 W. Birch Street	Existing restaurant expansion of 2,710 SF
20.	Western Realco	2929 E. Imperial Highway	131,500 SF industrial building
21.	CAMP Transformation	910 E. Birch Street, Suite 250	4,100 SF Fitness Center
22.	Brea Express Wash	300 S. Brea Boulevard	4,254 SF express car wash
23.	Raising Cane's	255 E. Imperial Highway	Demolish existing 9,588 SF office building and construction of a 4,047 SF fast food restaurant with drive-through
City of Fullerton			
24.	3105 Yorba Linda Boulevard	3105 Yorba Linda Boulevard	4,840 SF drive-through car wash
25.	Beckman Business Center	4300 North Harbor Boulevard	522,250 SF Warehousing, 166,185 SF General Light Industrial, 105,880 SF Manufacturing, 42,000 SF Office, and 142,350 SF fulfillment center
City of Chino Hills			
26.	Woodbridge Pacific Group (Canyon Hills/Hillcrest)	Northwest of Carbon Canyon Road and west of Canyon Hills Road	38 DU Single Family Detached
27.	Stonefield Development	Northwest of Carbon Canyon Road and east of Fairway Drive	28 DU single-family
28.	Morningfield Estates and Loving Savior of the Hills Lutheran Church and School Master Plan Addendum	South of Morningfield Drive, west of Peyton Drive, north of Chino Hills Parkway, adjacent to San Bernardino County Flood Channel	7-Lot Subdivision with semi-custom single-family homes, plus 3 classrooms/71 student addition to the Lutheran School
29.	Coptic Orthodox Church	East side of Peyton Drive, north of the Chino Creek Drainage Channel and south of the Chino Valley Community Church property	14,695 SF multi-purpose room, 8,645 SF Sanctuary and 555 SF Bookstore
30.	Buddhist Temple of Chino Hills	Northeast of Chino Hills Parkway and Rustic Drive	23,400 SF Buddhist temple expansion
31.	Hidden Oaks	East of Carbon Canyon Road at Canyon Hills Road	53 DU Single Family
32.	Paradise Ranch	East of Canyon Hills Road and south of Esquilime Drive	51 DU single-family

[23] Source: City of Brea, Fullerton, and Chino Hills Planning Departments.

TABLE 6-2

CUMULATIVE PROJECTS TRAFFIC GENERATION FORECAST[24]

Cumulative Project Description	Weekday Daily 2-Way	AM Peak Hour			PM Peak Hour			Sat. Daily 2-Way	Sat. Midday Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total		Enter	Exit	Total
1. CVS	1,948	59	58	117	59	58	117	2,042	87	90	177
2. Brea Place	6,364	122	271	393	300	199	499	4,817	237	198	435
3. Downtown Hotel	1,201	45	34	79	44	37	81	1,256	62	51	113
4. Mercury Apartments[25]	653	11	32	43	32	21	53	589	26	27	53
5. Brea 265 Specific Plan[26,27]	9,351	182	452	634	542	351	893	12,389	509	501	1,010
6. Brea Plaza[28]	-1,680	39	61	100	-33	-27	-60	-2,282	-276	-213	-489
7. Central Park Village	553	8	25	33	26	16	42	373	21	13	34
8. New Industrial Building	247	22	5	27	9	22	31	22	5	3	8
9. Alvero Assisted Living	213	9	6	15	8	12	20	240	10	12	22
10. Extra Space Self Storage	183	6	5	11	9	10	19	224	14	8	22
11. Brea Imperial Center[29]	1,315	58	60	118	56	37	93	1,214	106	90	196
12. Transwestern	288	24	7	31	10	26	36	26	8	3	11
13. The Phoenix Club	805	40	32	72	26	17	43	920	42	42	84
14. Aldi Grocery Store	1,783	31	23	54	72	72	144	2,142	87	86	173
15. Starbucks with Drive-Thru	961	52	51	103	35	35	70	983	53	52	105
16. Lambert Road Condos	162	2	8	10	8	4	12	109	5	5	10
17. Brea Metro Office Condos	222	3	10	13	11	6	17	150	8	6	14
18. Father's House	269	13	8	21	14	16	30	1,465	468	339	807

[24] Source: *Trip Generation*, 11th Edition, Institute of Transportation Engineers (ITE), Washington, D.C. (2021), unless otherwise noted.

[25] Source: *Mercury Apartments TIA*, prepared by LLG Engineers, dated July 2019.

[26] Source: *Draft Brea 265 Specific Plan TCA*, prepared by LLG Engineers, dated January 2022.

[27] Brea 265 Specific Plan Project has been included as a related project as part of Year 2045 background traffic conditions.

[28] Source: *Brea Plaza Expansion Revised TCA*, prepared by LLG Engineers, dated July 2021.

[29] Source: *Brea Imperial Center TIA*, prepared by Wildan Engineering, dated July 2018.

TABLE 6-2 (CONTINUED)

CUMULATIVE PROJECTS TRAFFIC GENERATION FORECAST[30]

Cumulative Project Description	Weekday Daily 2-Way	AM Peak Hour			PM Peak Hour			Sat. Daily 2-Way	Sat. Midday Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total		Enter	Exit	Total
19. Cha Cha's Expansion	262	13	10	23	9	5	14	299	13	14	27
20. Western Realco	299	25	8	33	10	27	37	27	8	3	11
21. CAMP Transformation	140	3	2	5	8	6	14	130	6	7	13
22. Brea Express Wash	600	16	16	32	30	30	60	1,290	65	64	129
23. Raising Cane's[31]	1,727	0	0	0	61	48	109	3,817	115	111	226
24. 3105 Yorba Linda Boulevard	690	18	18	36	35	34	69	1,470	74	73	147
25. Beckman Business Center[32]	7,564	583	172	755	253	599	852	2,363	154	134	288
26. Woodbridge Pacific Group (Canyon Hills/Hillcrest)	358	7	20	27	23	13	36	360	19	16	35
27. Stonefield Development	264	5	15	20	16	10	26	265	14	12	26
28. Morningfield Estates and Loving Savior of the Hills Lutheran Church and School Master Plan Addendum[33]	264	36	33	69	24	26	50	69	4	3	7
29. Coptic Orthodox Church	494	20	11	31	19	23	42	179	24	17	41
30. Buddhist Temple of Chino Hills[34]	200	7	5	12	6	6	12	227	55	23	78
31. Hidden Oaks	500	10	27	37	32	18	50	502	26	23	49
32. Paradise Ranch[35]	481	10	28	38	32	18	50	487	25	22	47
Cumulative Projects Total Trip Generation Potential	**38,681**	**1,479**	**1,513**	**2,992**	**1,786**	**1,775**	**3,561**	**38,164**	**2,074**	**1,835**	**3,909**

30 Source: *Trip Generation*, 11th Edition, Institute of Transportation Engineers (ITE), Washington, D.C. (2021), unless otherwise noted.

31 Source: *Focused Transportation Assessment for Raising Cane's Projct,* prepared by Kimley Horn, dated December 2020.

32 Source: *Beckman Business Center Proposed Building 6 Tenant/Land Use Modification TIA Report Addendum,* prepared by LLG Engineers, dated September 2019. Although this development is completely constructed, it was only partially occupied during the time the existing traffic counts were collected. Hence to provide a conservative assessment, all buildings are assumed to be vacant.

33 Source: *Morningfield Estates and Loving Savior of the Hills Lutheran Church and School Master Plan Addendum Traffic Impact Analysis,* prepared by LLG Engineers, dated April 12, 2017.

34 Source: *Buddhist Temple Traffic Impact Analysis,* prepared by LLG Engineers, dated January 23, 2017.

35 Source: *Paradise Ranch Traffic Study,* prepared by LLG Engineers, dated August 2021.

KEY

1. CVS
2. BREA PLACE
3. DOWNTOWN HOTEL
4. MERCURY APARTMENTS
5. BREA 265 SPECIFIC PLAN
6. BREA PLAZA
7. CENTRAL PARK VILLAGE
8. NEW INDUSTRIAL BUILDING
9. ALVERO ASSISTED LIVING
10. EXTRA SPACE SELF STORAGE
11. BREA IMPERIAL CENTER
12. TRANSWESTERN
13. THE PHOENIX CLUB
14. ALDI GROCERY STORE
15. STARBUCKS WITH DRIVE-THRU
16. LAMBERT ROAD CONDOS
17. BREA METRO OFFICE CONDOS
18. FATHER'S HOUSE
19. CHA CHA'S EXPANSION
20. WESTERN REALCO
21. CAMP TRANSFORMATION
22. BREA EXPRESS WASH
23. RAISING CANE'S
24. 3105 YORBA LINDA BOULEVARD
25. BECKMAN BUSINESS CENTER
26. WOODBRIDGE PACIFIC GROUP (CANYON HILLS/HILLCREST)
27. STONEFIELD DEVELOPMENT
28. MORNINGFIELD ESTATES AND LOVING SAVIOR OF THE HILLS LUTHERAN CHURCH AND SCHOOL MASTER PLAN ADDENDUM
29. COPTIC ORTHODOX CHURCH
30. BUDDHIST TEMPLE OF CHINO HILLS
31. HIDDEN OAKS
32. PARADISE RANCH

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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

SOURCE: GOOGLE

KEY

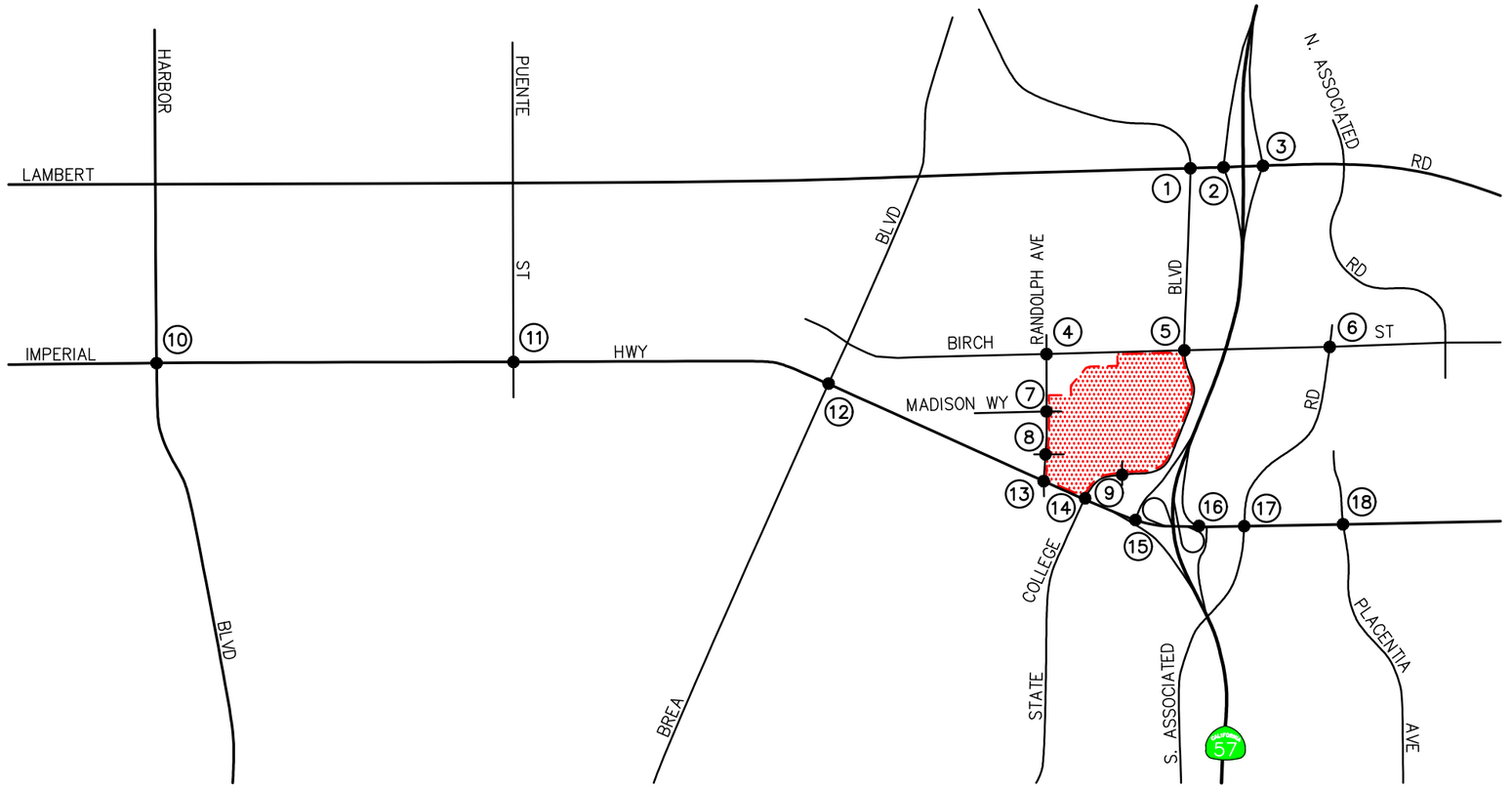
(#) = CUMULATIVE PROJECT LOCATION

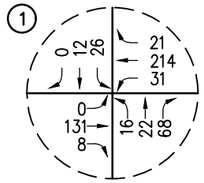
= PROJECT SITE

FIGURE 6-1

LOCATION OF CUMULATIVE PROJECTS

BREA MALL MIXED-USE PROJECT, BREA





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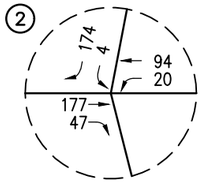

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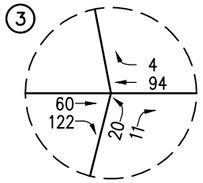

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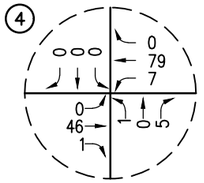

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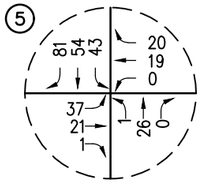

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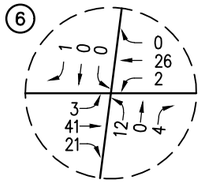
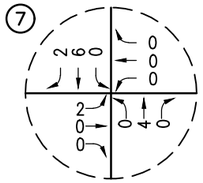
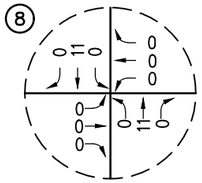


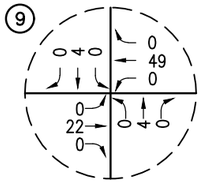
6 S. ASSOCIATED RD @ BIRCH ST



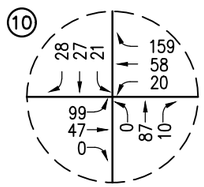
7 RANDOLPH AVE @ MADISON WAY



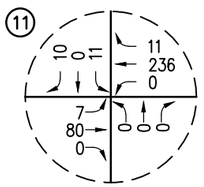
8 RANDOLPH AVE @ BREA MALL



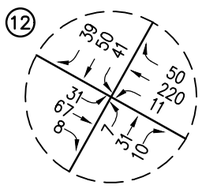
9 BREA MALL SOUTH @ STATE COLLEGE BLVD



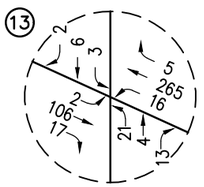
10 HARBOR BLVD @ IMPERIAL HWY



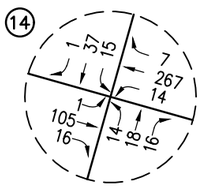
11 PUENTE ST @ IMPERIAL HWY



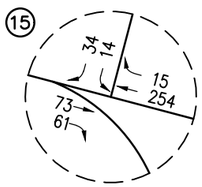
12 BREA BLVD @ IMPERIAL HWY



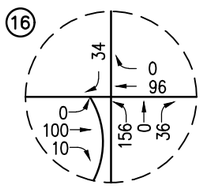
13 RANDOLPH AVE @ IMPERIAL HWY



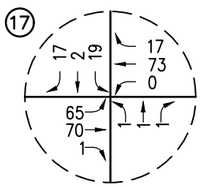
14 STATE COLLEGE BLVD @ IMPERIAL HWY



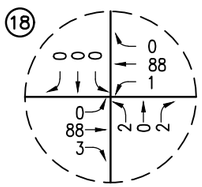
15 SR-57 SB RAMPS @ IMPERIAL HWY



16 SR-57 NB RAMPS @ IMPERIAL HWY



17 ASSOCIATED RD @ IMPERIAL HWY



18 CASTLEGATE LN/PLACENTIA AVE @ IMPERIAL HWY

n:\4000\2194099 - brea mall expansion & improvement, brea\dwg\4099 prn base.dwg LDP 14:17:08 04-14-2022 kopulsky

LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

(#) = STUDY INTERSECTION

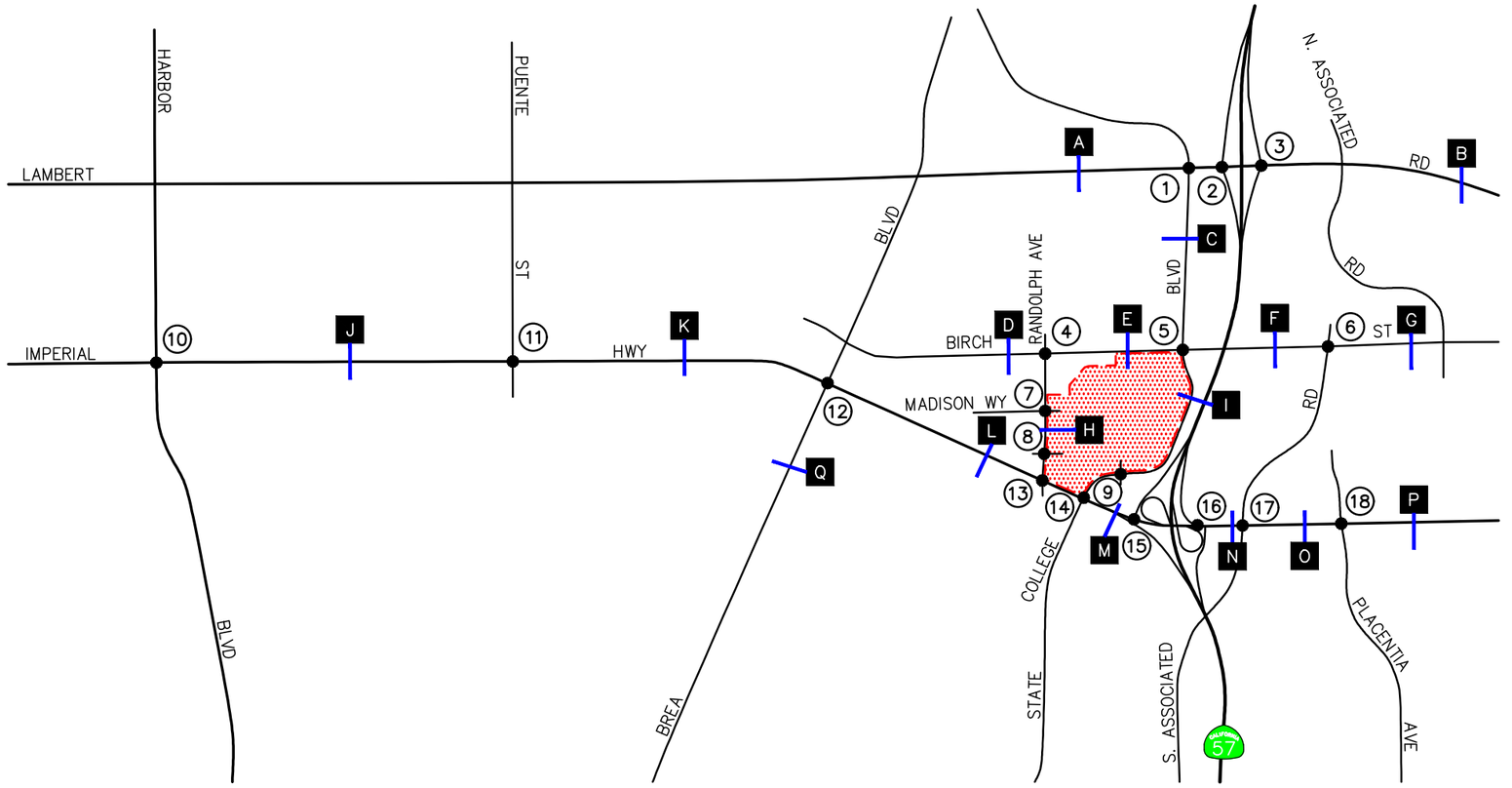
= BREA MALL

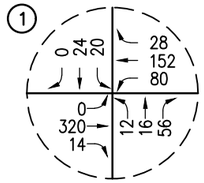
FIGURE 6-2

WEEKDAY AM PEAK HOUR CUMULATIVE PROJECTS TRAFFIC VOLUMES

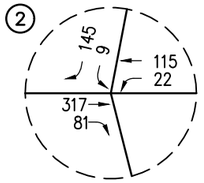
BREA MALL EXPANSION & IMPORVEMENTS, BREA

LOCATION	VOLUME
A	4,615
B	2,005
C	2,470
D	2,294
E	2,843
F	1,779
G	1,237
H	290
I	1,331
J	2,846
K	3,465
L	4,772
M	3,448
N	2,864
O	2,490
P	2,557
Q	2,091

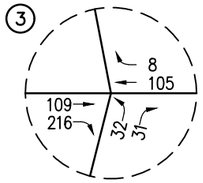




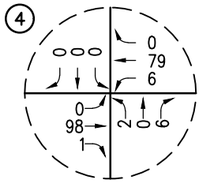
STATE COLLEGE BLVD @ LAMBERT RD



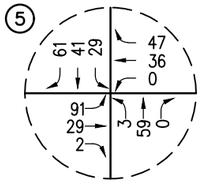
SR-57 SB RAMPS @ LAMBERT RD



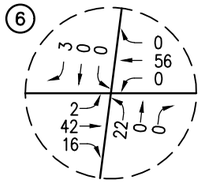
SR-57 NB RAMPS @ LAMBERT RD



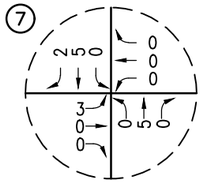
RANDOLPH AVE @ BIRCH ST



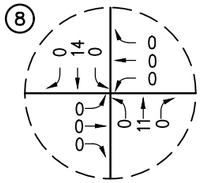
STATE COLLEGE BLVD @ BIRCH ST



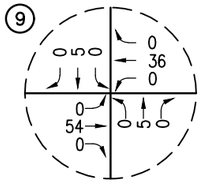
S. ASSOCIATED RD @ BIRCH ST



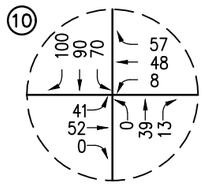
RANDOLPH AVE @ MADISON WAY



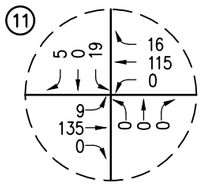
RANDOLPH AVE @ BREA MALL



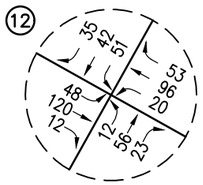
BREA MALL SOUTH @ STATE COLLEGE BLVD



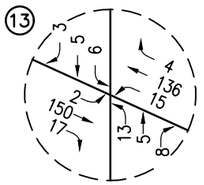
HARBOR BLVD @ IMPERIAL HWY



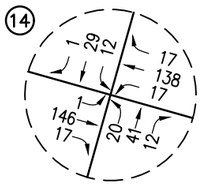
PUENTE ST @ IMPERIAL HWY



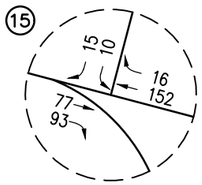
BREA BLVD @ IMPERIAL HWY



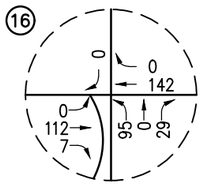
RANDOLPH AVE @ IMPERIAL HWY



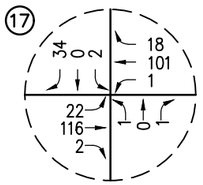
STATE COLLEGE BLVD @ IMPERIAL HWY



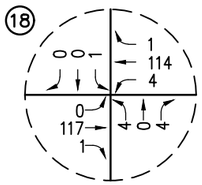
SR-57 SB RAMPS @ IMPERIAL HWY



SR-57 NB RAMPS @ IMPERIAL HWY



ASSOCIATED RD @ IMPERIAL HWY



CASTLEGATE LN/PLACENTIA AVE @ IMPERIAL HWY

n:\4000\2194099 - brea mall expansion & improvement, brea\dwg\4099 prn base.dwg LDP 14:17:08 04-14-2022 kopulsky

LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

(#) = STUDY INTERSECTION

[#] = STUDY ROADWAY SEGMENT

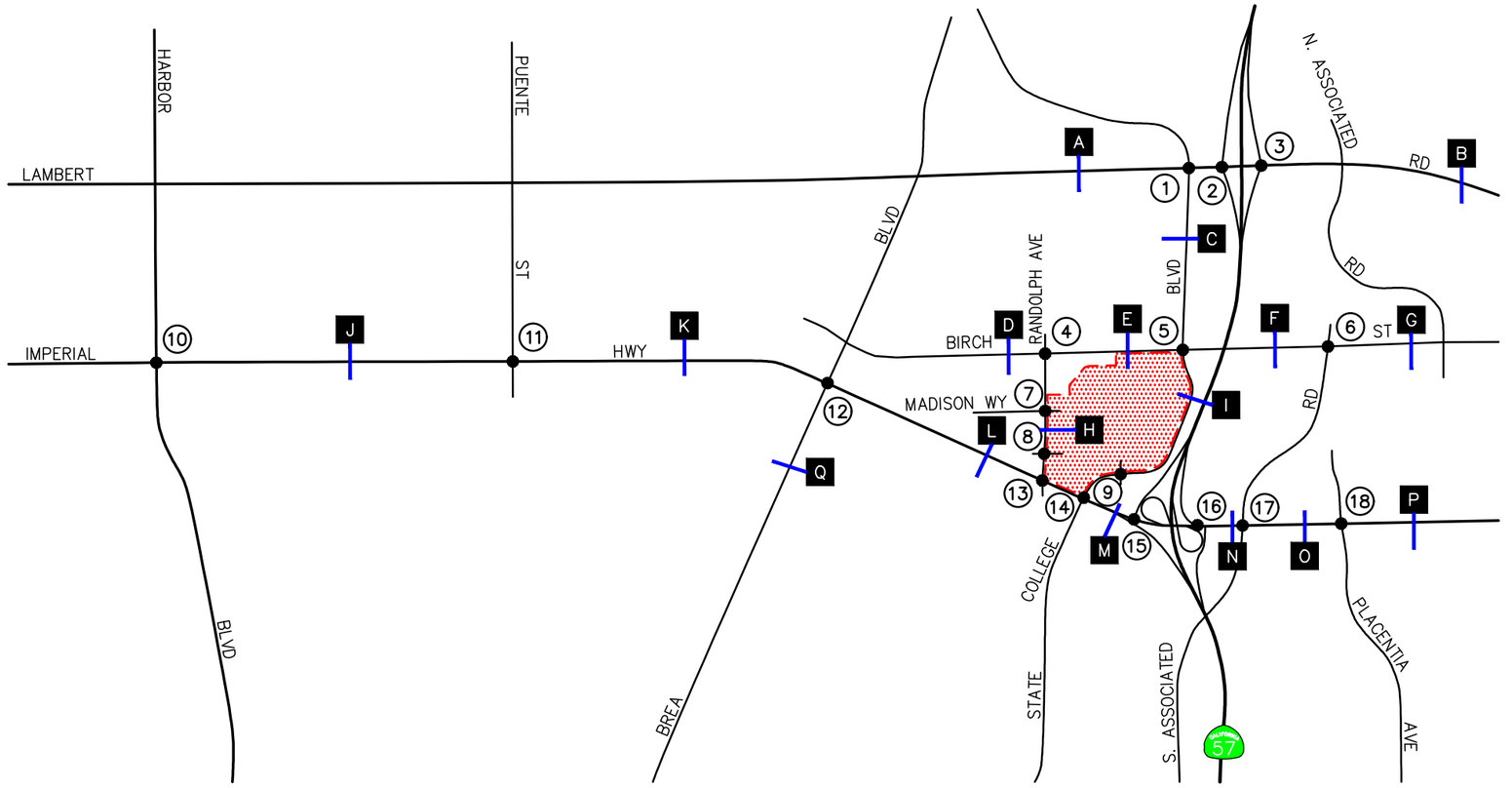
= BREA MALL

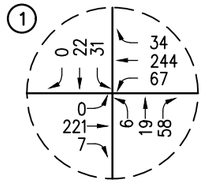
FIGURE 6-3

WEEKDAY PM PEAK HOUR AND DAILY CUMULATIVE PROJECTS TRAFFIC VOLUMES

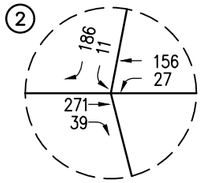
BREA MALL EXPANSION & IMPORVEMENTS, BREA

LOCATION	VOLUME
A	4,561
B	1,969
C	1,901
D	1,915
E	2,371
F	1,530
G	1,096
H	274
I	1,037
J	2,585
K	3,182
L	4,535
M	3,131
N	2,765
O	2,364
P	2,454
Q	1,877

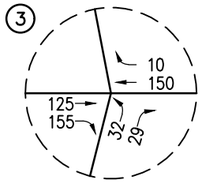




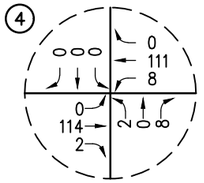
1 STATE COLLEGE BLVD @ LAMBERT RD



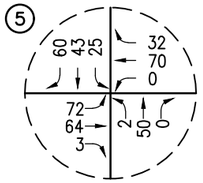
2 SR-57 SB RAMPS @ LAMBERT RD



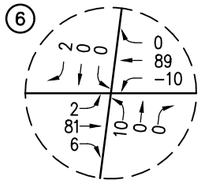
3 SR-57 NB RAMPS @ LAMBERT RD



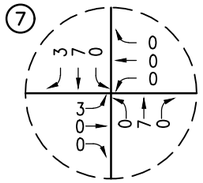
4 RANDOLPH AVE @ BIRCH ST



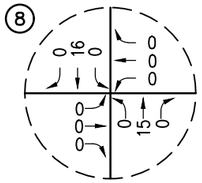
5 STATE COLLEGE BLVD @ BIRCH ST



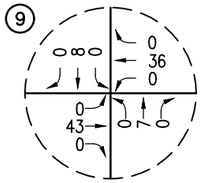
6 S. ASSOCIATED RD @ BIRCH ST



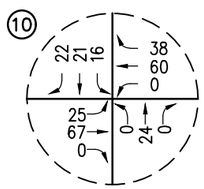
7 RANDOLPH AVE @ MADISON WAY



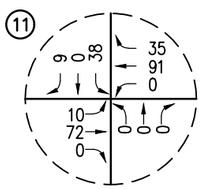
8 RANDOLPH AVE @ BREA MALL



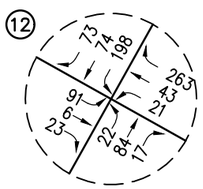
9 BREA MALL SOUTH @ STATE COLLEGE BLVD



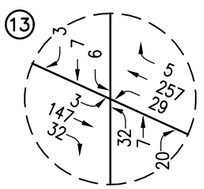
10 HARBOR BLVD @ IMPERIAL HWY



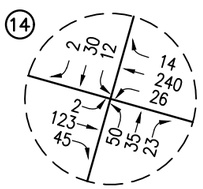
11 PUENTE ST @ IMPERIAL HWY



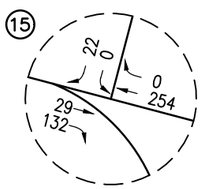
12 BREA BLVD @ IMPERIAL HWY



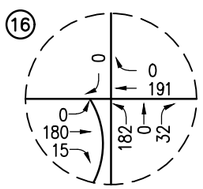
13 RANDOLPH AVE @ IMPERIAL HWY



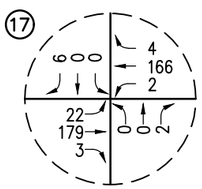
14 STATE COLLEGE BLVD @ IMPERIAL HWY



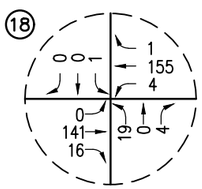
15 SR-57 SB RAMPS @ IMPERIAL HWY



16 SR-57 NB RAMPS @ IMPERIAL HWY



17 ASSOCIATED RD @ IMPERIAL HWY



18 CASTLEGATE LN/PLACENTIA AVE @ IMPERIAL HWY

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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

(#) = STUDY INTERSECTION

= STUDY ROADWAY SEGMENT

= BREA MALL

FIGURE 6-4

WEEKEND (SATURDAY) MIDDAY PEAK HOUR AND DAILY CUMULATIVE PROJECTS TRAFFIC VOLUMES

BREA MALL EXPANSION & IMPORVEMENTS, BREA

6.3 Year 2045 Traffic Conditions

As coordinated with City staff, the Year 2045 traffic volume forecasts for this traffic study were developed via the utilization of the OCTAM4.0 Year 2045 traffic model provided by OCTA. Specifically, daily, AM peak period and PM peak period link traffic volumes were provided by OCTA for the existing base year (i.e. Year 2012) and for the Year 2045 year. The AM peak period corresponds to a three-hour morning commute period while the PM peak period corresponds to a four-hour afternoon commute period. Using the peak period model runs and the OCTA approved peak hour factors (i.e. AM = 0.3566 and PM = 0.2662), the one-hour peak hour link traffic volumes were determined. These future year 2045 link traffic volumes were post-processed based on the relationship of the base year validation model run output to the base year ground traffic counts resulting in anticipated Year 2045 without project daily traffic volumes for the key roadway segments and AM peak hour/PM peak hour turning movements for the key study intersections.

Appendix E presents the post-processing worksheets.

6.4 Year 2026 and Year 2045 Traffic Volumes

6.4.1 *Year 2026 Traffic Volumes*

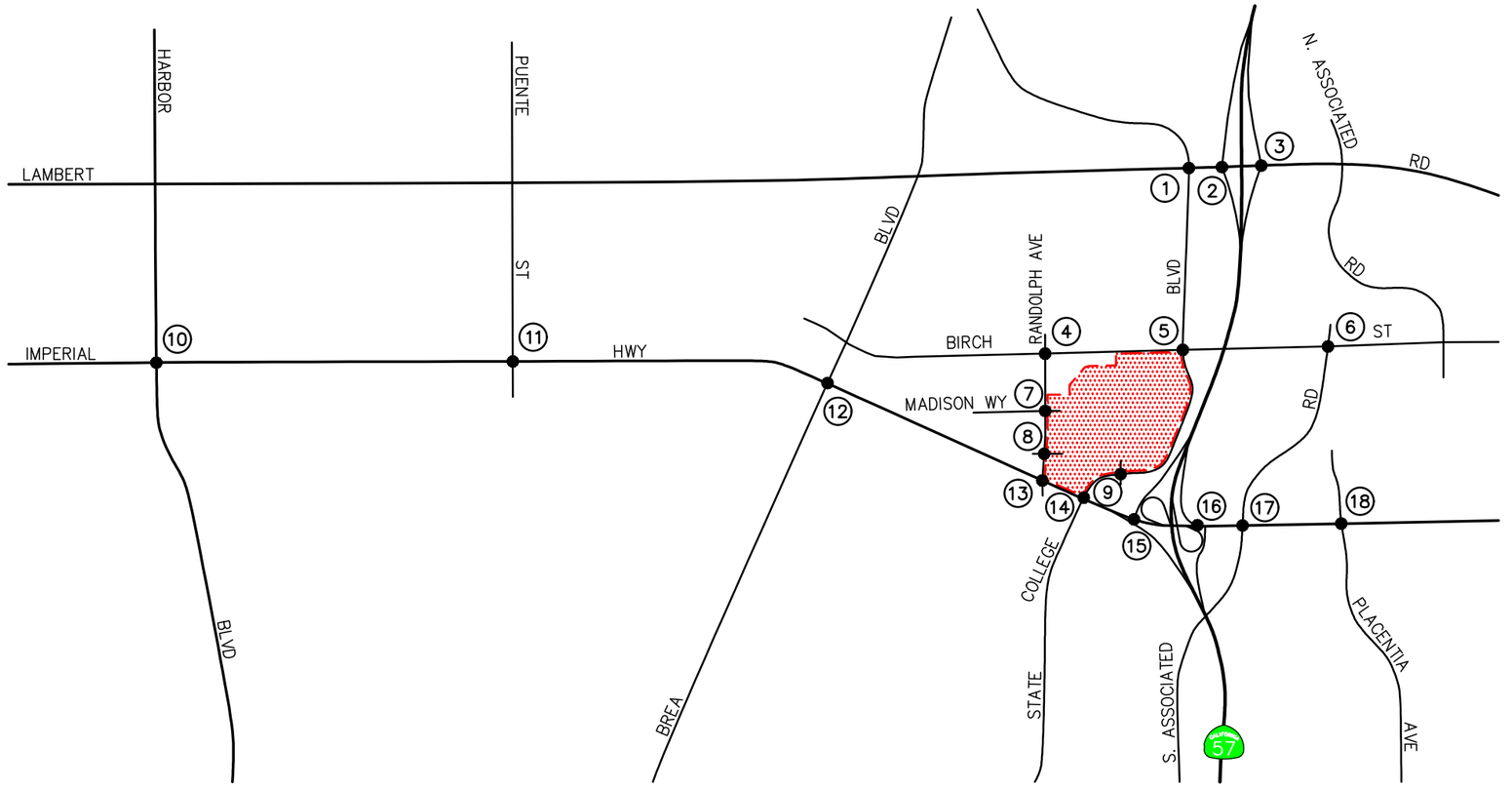
Figures 6-5, ***6-6*** and ***6-7*** present the weekday AM and PM peak hour and weekend (Saturday) midday peak hour cumulative traffic volumes (existing traffic + ambient growth + related projects) at the eighteen (18) key study intersections for the Year 2026, respectively. *Figures 6-6* and *6-7* also presents the Year 2026 daily cumulative traffic volumes during a weekday and weekend, respectively.

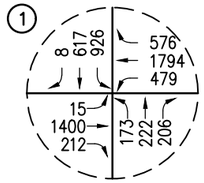
Figures 6-8, 6-9 and ***6-10*** illustrate the Year 2026 forecast AM and PM peak hour traffic volumes, with the inclusion of the trips generated by the proposed Project, respectively. *Figures 6-9* and *6-10* also presents the Year 2026 daily cumulative plus project traffic volumes.

6.4.2 *Year 2045 Traffic Volumes*

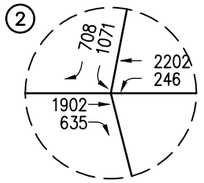
Figures 6-11, 6-12 and ***6-13*** present the anticipated Year 2045 AM and PM peak hour cumulative traffic volumes at the eighteen (18) key study intersections, respectively. *Figures 6-12* and *6-13* also presents the Year 2045 daily cumulative traffic volumes.

Figures 6-14, 6-15 and ***6-16*** illustrate the anticipated Year 2045 forecast AM and PM peak hour traffic volumes, with the inclusion of the trips generated by the proposed Project, respectively. *Figures 6-15* and *6-16* also presents the Year 2045 daily cumulative plus project traffic volumes.

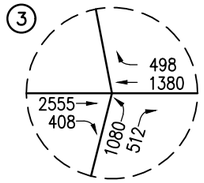




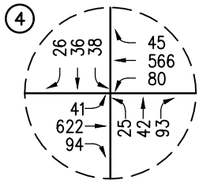
STATE COLLEGE BLVD @ LAMBERT RD



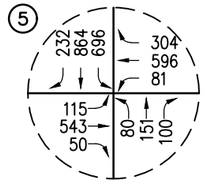
SR-57 SB RAMPS @ LAMBERT RD



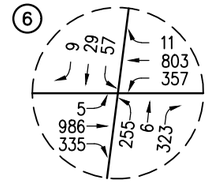
SR-57 NB RAMPS @ LAMBERT RD



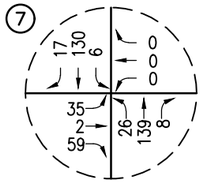
RANDOLPH AVE @ BIRCH ST



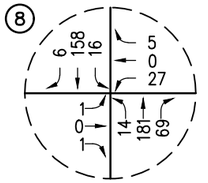
STATE COLLEGE BLVD @ BIRCH ST



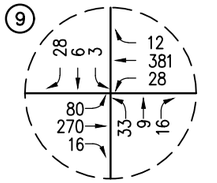
S. ASSOCIATED RD @ BIRCH ST



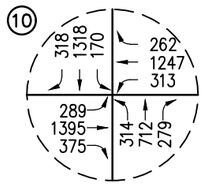
RANDOLPH AVE @ MADISON WAY



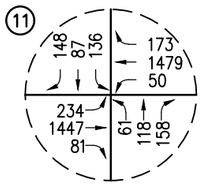
RANDOLPH AVE @ BREA MALL



BREA MALL SOUTH @ STATE COLLEGE BLVD



HARBOR BLVD @ IMPERIAL HWY



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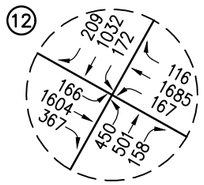

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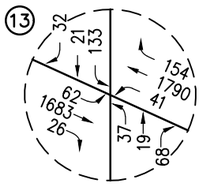
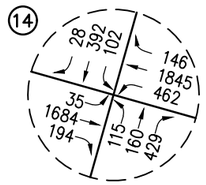
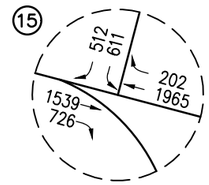


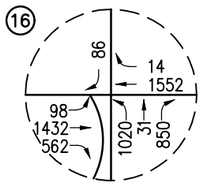
RANDOLPH AVE @ IMPERIAL HWY



STATE COLLEGE BLVD @ IMPERIAL HWY



SR-57 SB RAMPS @ IMPERIAL HWY



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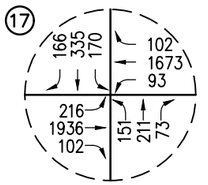

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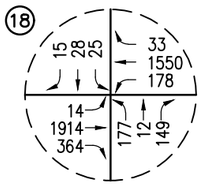

CASTLEGATE LN/PLACENTIA AVE @ IMPERIAL HWY

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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

(#) = STUDY INTERSECTION

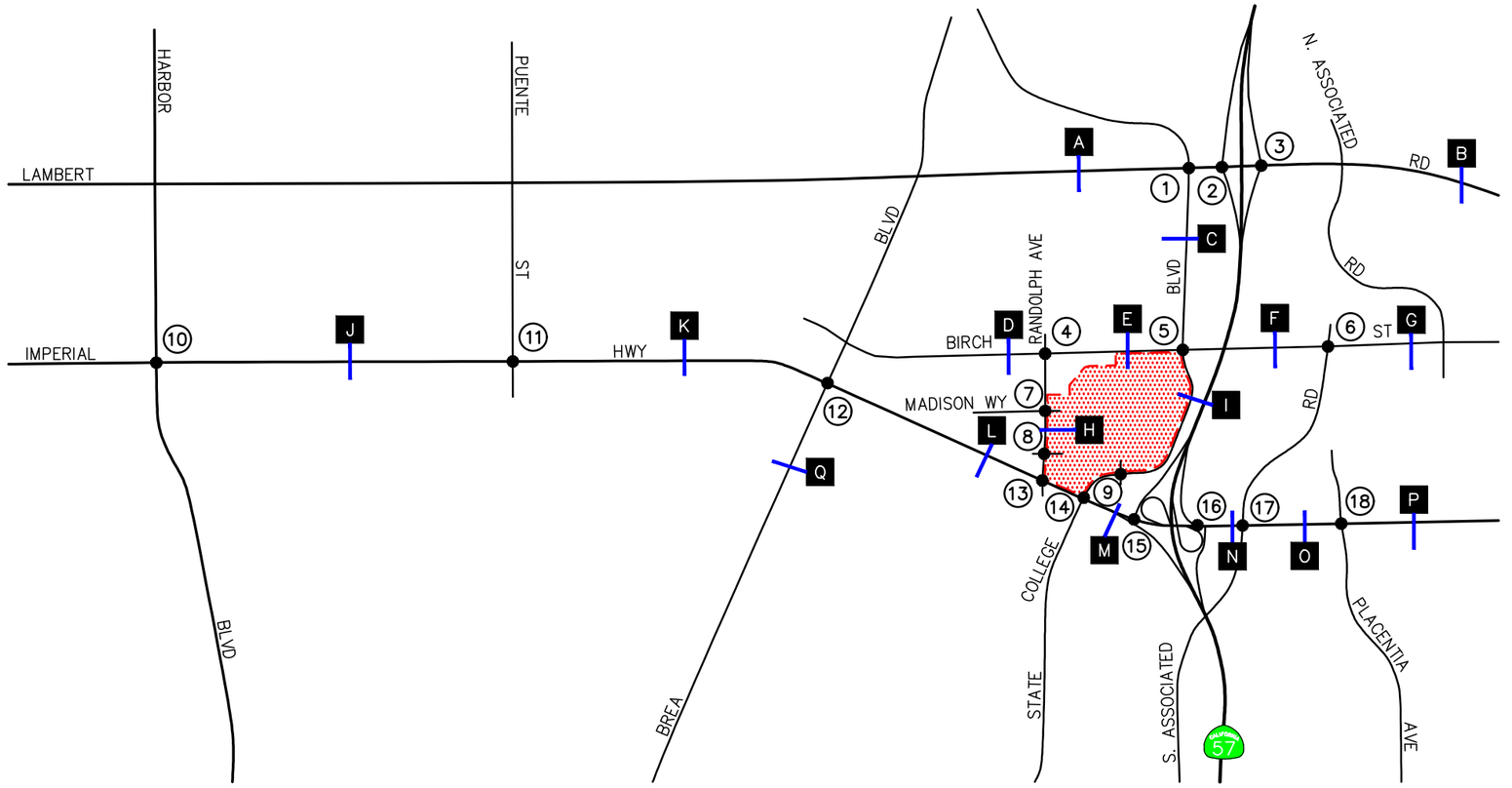
= BREA MALL

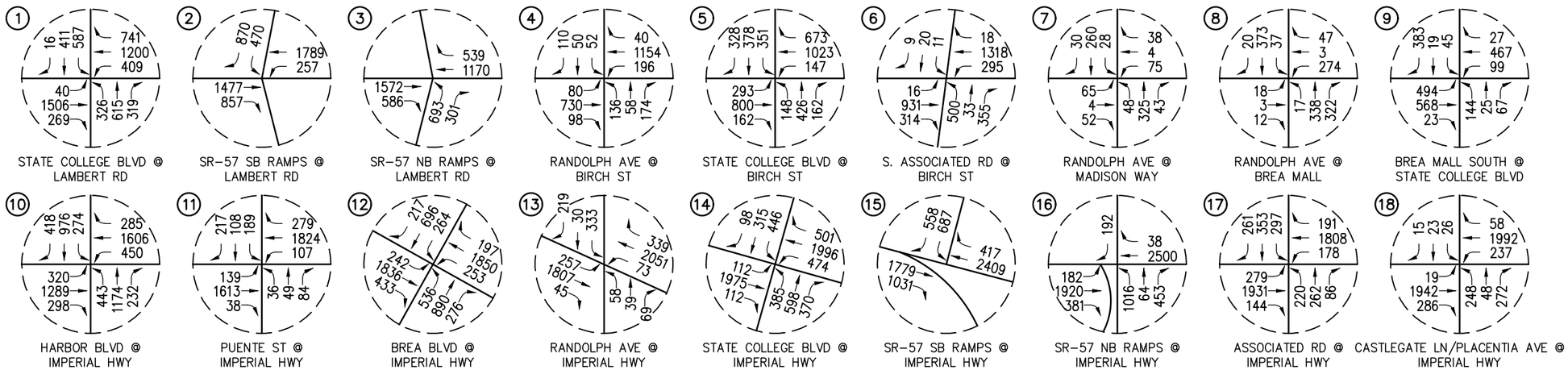
FIGURE 6-5

YEAR 2026 WEEKDAY AM PEAK HOUR CUMULATIVE TRAFFIC VOLUMES

BREA MALL EXPANSION & IMPORVEMENTS, BREA

LOCATION	VOLUME
A	45,190
B	38,514
C	26,228
D	21,805
E	23,963
F	28,797
G	27,712
H	8,601
I	16,157
J	49,037
K	64,947
L	63,247
M	82,664
N	61,674
O	58,953
P	59,107
Q	35,573





LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

(#) = STUDY INTERSECTION

= STUDY ROADWAY SEGMENT

= BREA MALL

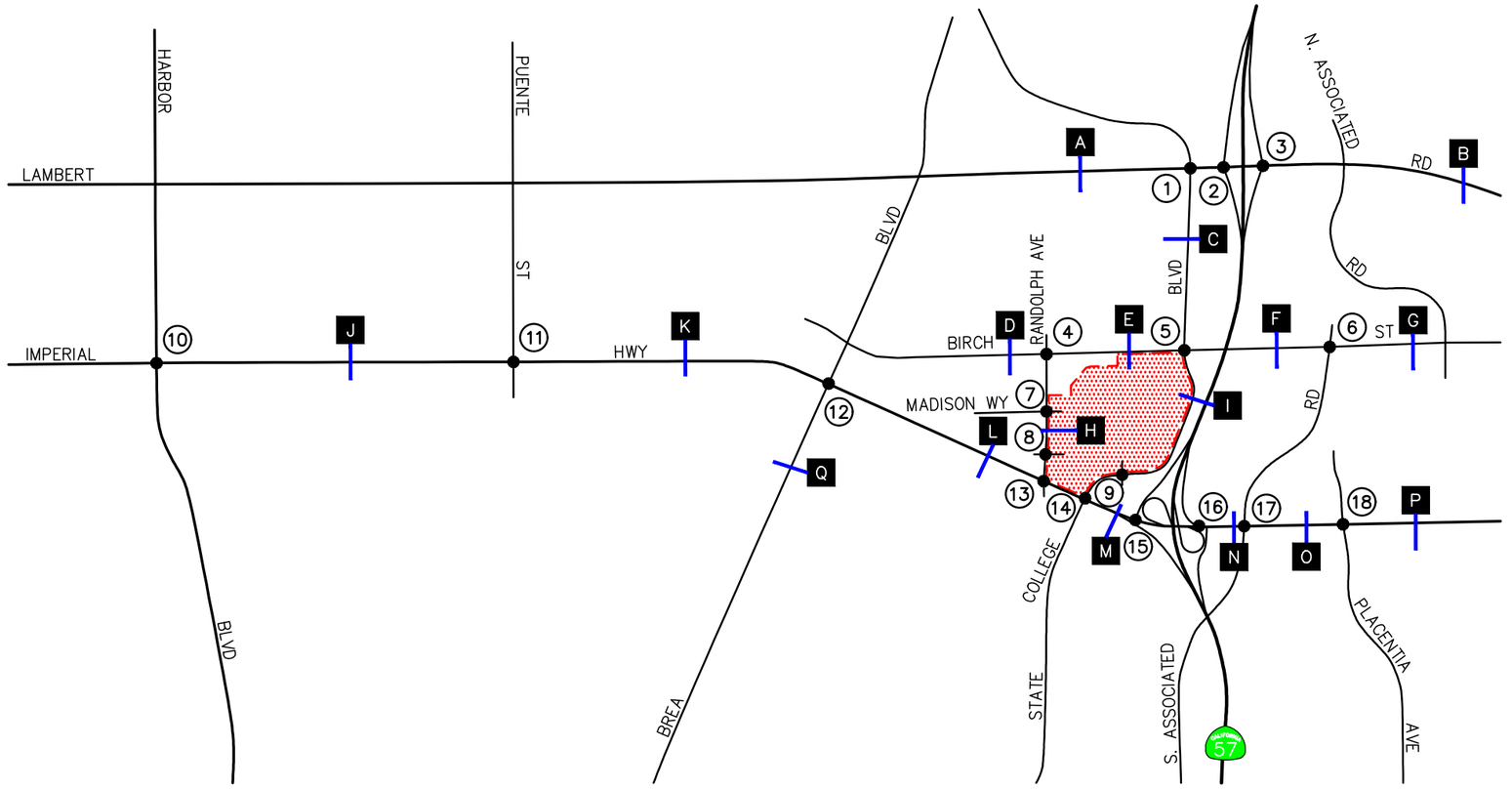
FIGURE 6-6

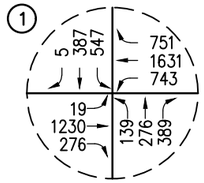
YEAR 2026 WEEKDAY PM PEAK HOUR AND DAILY CUMULATIVE TRAFFIC VOLUMES

BREA MALL EXPANSION & IMPORVEMENTS, BREA

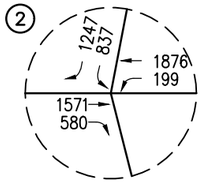
n:\4000\2194099 - brea mall expansion & improvement, brea\dwg\4099 prn base.dwg LDP 14:17:08 04-14-2022 kopulsky

LOCATION	VOLUME
A	46,736
B	39,922
C	26,608
D	22,206
E	21,320
F	29,617
G	28,620
H	8,822
I	16,463
J	50,619
K	67,121
L	65,371
M	85,546
N	63,931
O	61,084
P	61,251
Q	36,697

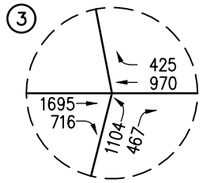




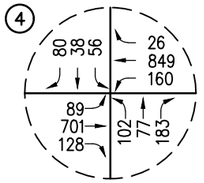
STATE COLLEGE BLVD @ LAMBERT RD



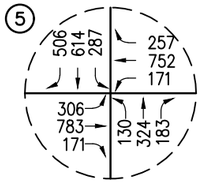
SR-57 SB RAMPS @ LAMBERT RD



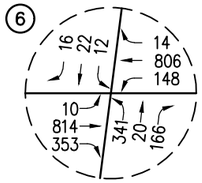
SR-57 NB RAMPS @ LAMBERT RD



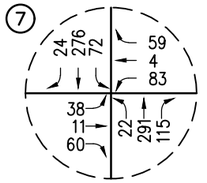
RANDOLPH AVE @ BIRCH ST



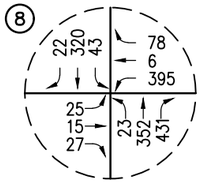
STATE COLLEGE BLVD @ BIRCH ST



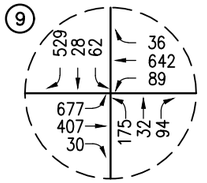
S. ASSOCIATED RD @ BIRCH ST



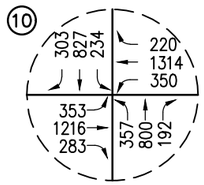
RANDOLPH AVE @ MADISON WAY



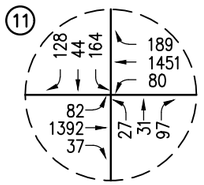
RANDOLPH AVE @ BREA MALL



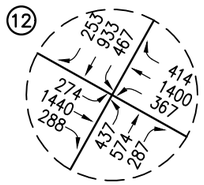
BREA MALL SOUTH @ STATE COLLEGE BLVD



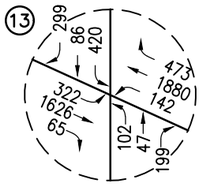
HARBOR BLVD @ IMPERIAL HWY



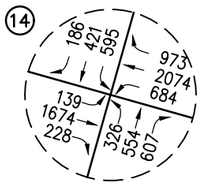
PUENTE ST @ IMPERIAL HWY



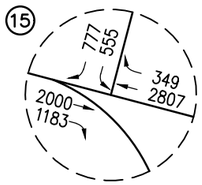
BREA BLVD @ IMPERIAL HWY



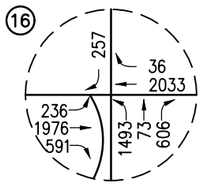
RANDOLPH AVE @ IMPERIAL HWY



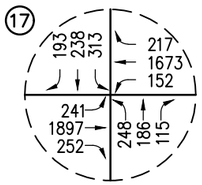
STATE COLLEGE BLVD @ IMPERIAL HWY



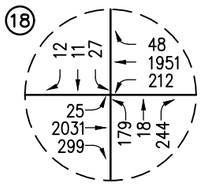
SR-57 SB RAMPS @ IMPERIAL HWY



SR-57 NB RAMPS @ IMPERIAL HWY



ASSOCIATED RD @ IMPERIAL HWY



CASTLEGATE LN/PLACENTIA AVE @ IMPERIAL HWY

LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

(#) = STUDY INTERSECTION

[#] = STUDY ROADWAY SEGMENT

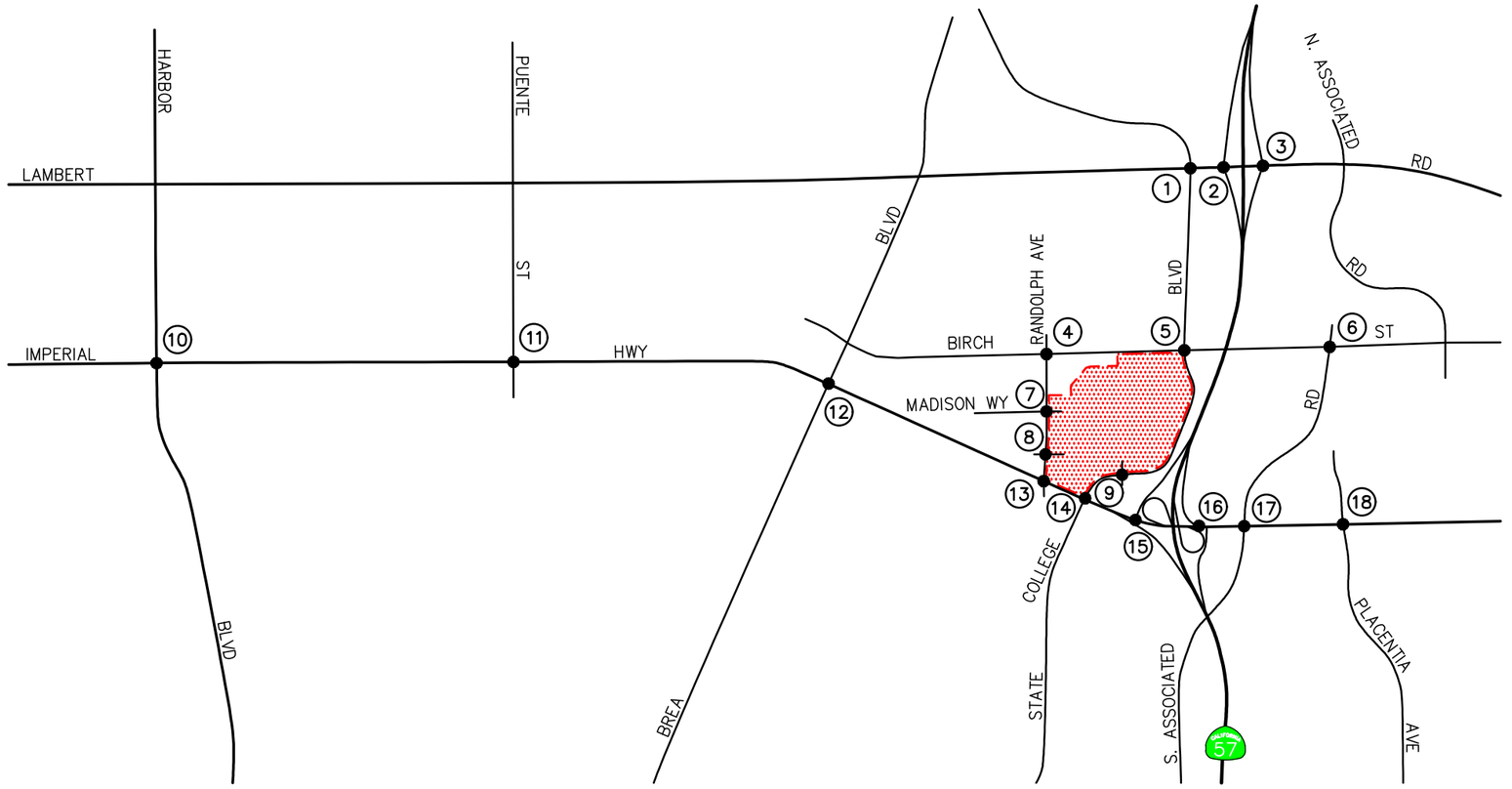
= BREA MALL

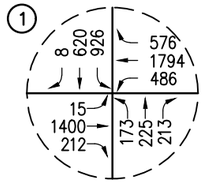
FIGURE 6-7

YEAR 2026 WEEKEND (SATURDAY) MIDDAY PEAK HOUR AND DAILY CUMULATIVE TRAFFIC VOLUMES

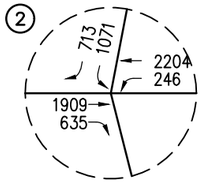
BREA MALL EXPANSION & IMPORVEMENTS, BREA

n:\4000\2194099 - brea mall expansion & improvement, brea\dwg\4099 prn base.dwg LDP 14:17:08 04-14-2022 kopulsky

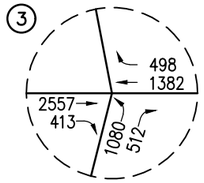




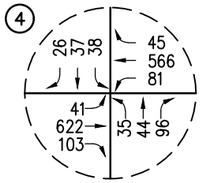
STATE COLLEGE BLVD @ LAMBERT RD



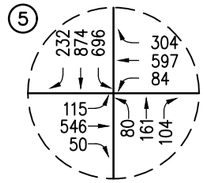
SR-57 SB RAMPS @ LAMBERT RD



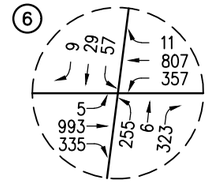
SR-57 NB RAMPS @ LAMBERT RD



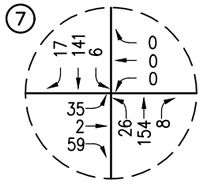
RANDOLPH AVE @ BIRCH ST



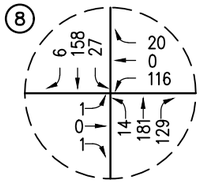
STATE COLLEGE BLVD @ BIRCH ST



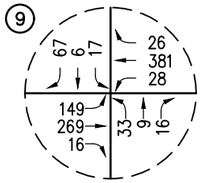
S. ASSOCIATED RD @ BIRCH ST



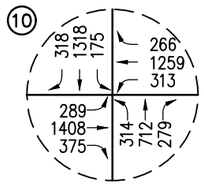
RANDOLPH AVE @ MADISON WAY



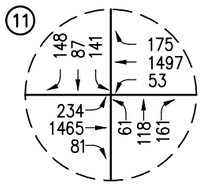
RANDOLPH AVE @ BREA MALL



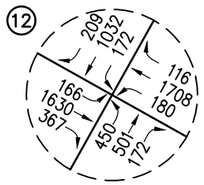
BREA MALL SOUTH @ STATE COLLEGE BLVD



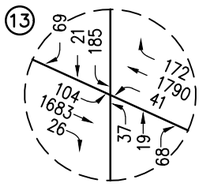
HARBOR BLVD @ IMPERIAL HWY



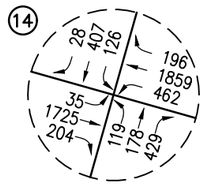
PUENTE ST @ IMPERIAL HWY



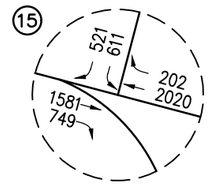
BREA BLVD @ IMPERIAL HWY



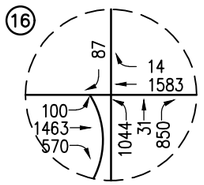
RANDOLPH AVE @ IMPERIAL HWY



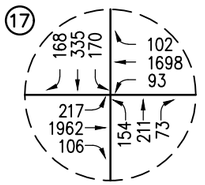
STATE COLLEGE BLVD @ IMPERIAL HWY



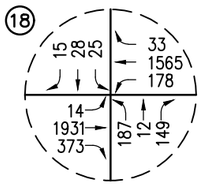
SR-57 SB RAMPS @ IMPERIAL HWY



SR-57 NB RAMPS @ IMPERIAL HWY



ASSOCIATED RD @ IMPERIAL HWY



CASTLEGATE LN/PLACENTIA AVE @ IMPERIAL HWY

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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

(#) = STUDY INTERSECTION

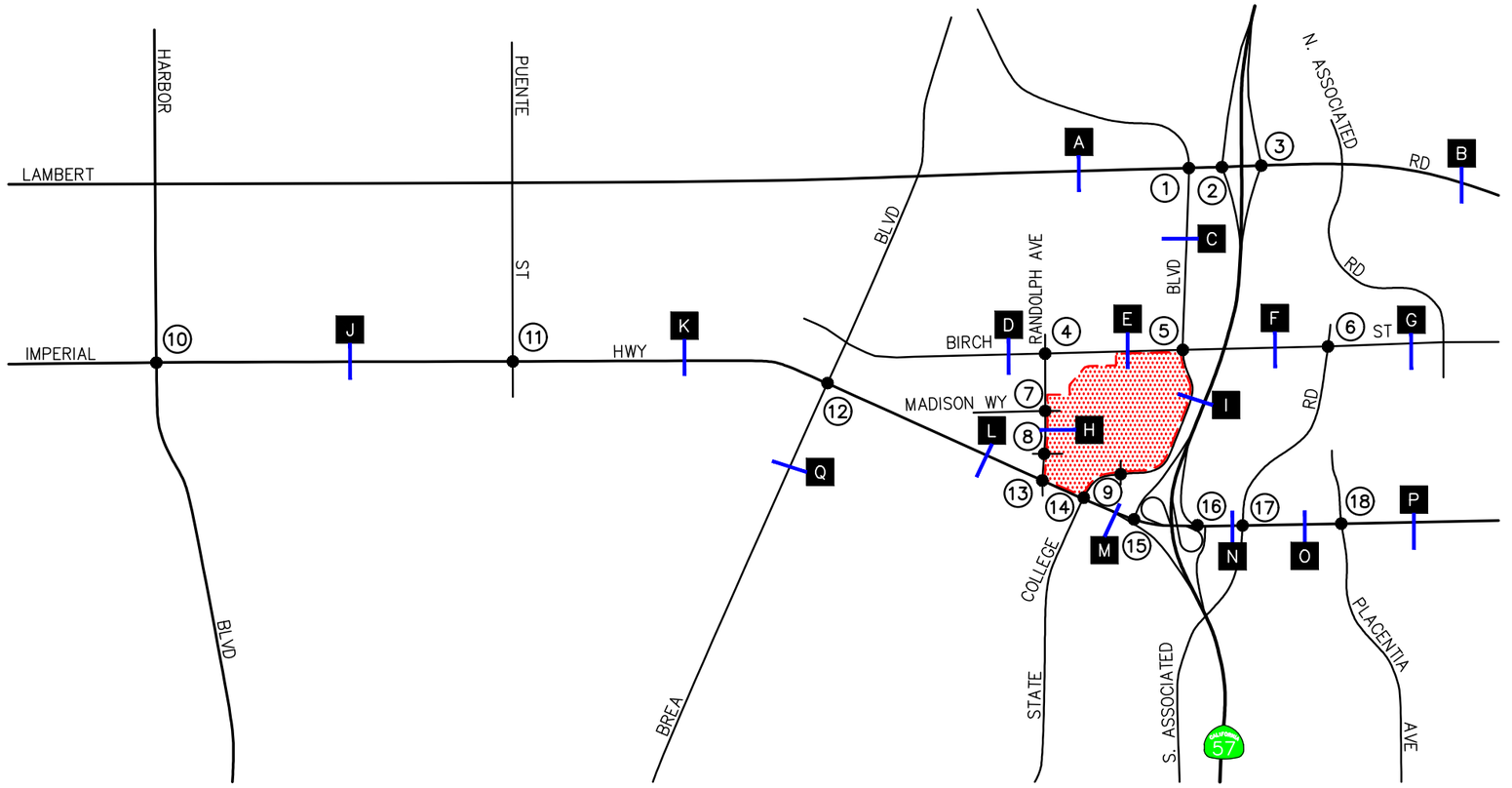
= BREA MALL

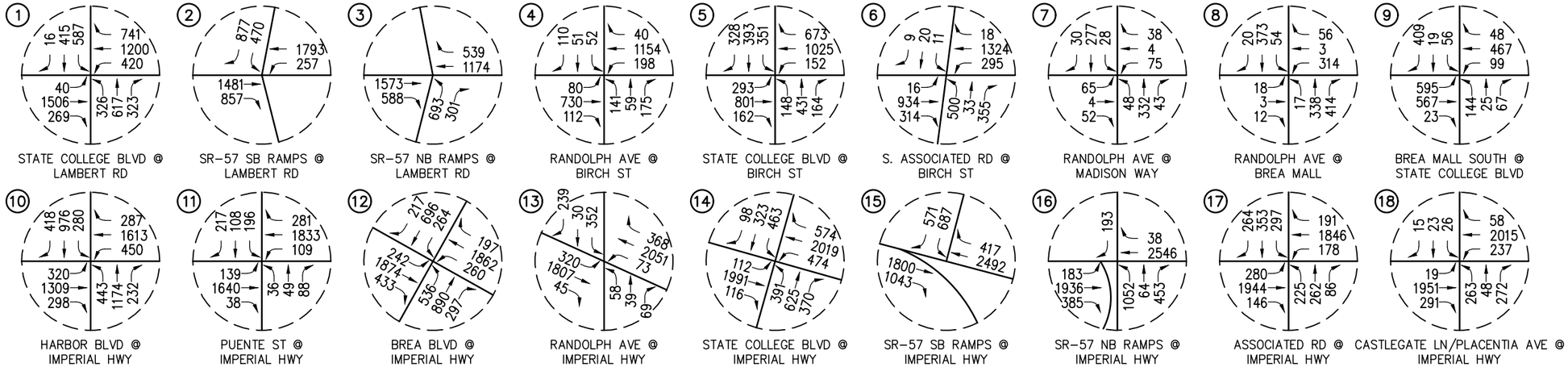
FIGURE 6-8

YEAR 2026 WEEKDAY AM PEAK HOUR CUMULATIVE TRAFFIC VOLUMES WITH PROJECT

BREA MALL EXPANSION & IMPORVEMENTS, BREA

LOCATION	VOLUME
A	45,190
B	38,566
C	26,437
D	22,007
E	23,998
F	28,907
G	27,822
H	9,458
I	16,441
J	49,404
K	65,458
L	64,078
M	83,979
N	62,305
O	59,470
P	59,426
Q	35,854





LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

(#) = STUDY INTERSECTION

= STUDY ROADWAY SEGMENT

= BREA MALL

FIGURE 6-9

YEAR 2026 WEEKDAY PM PEAK HOUR AND DAILY CUMULATIVE TRAFFIC VOLUMES WITH PROJECT

BREA MALL EXPANSION & IMPORVEMENTS, BREA

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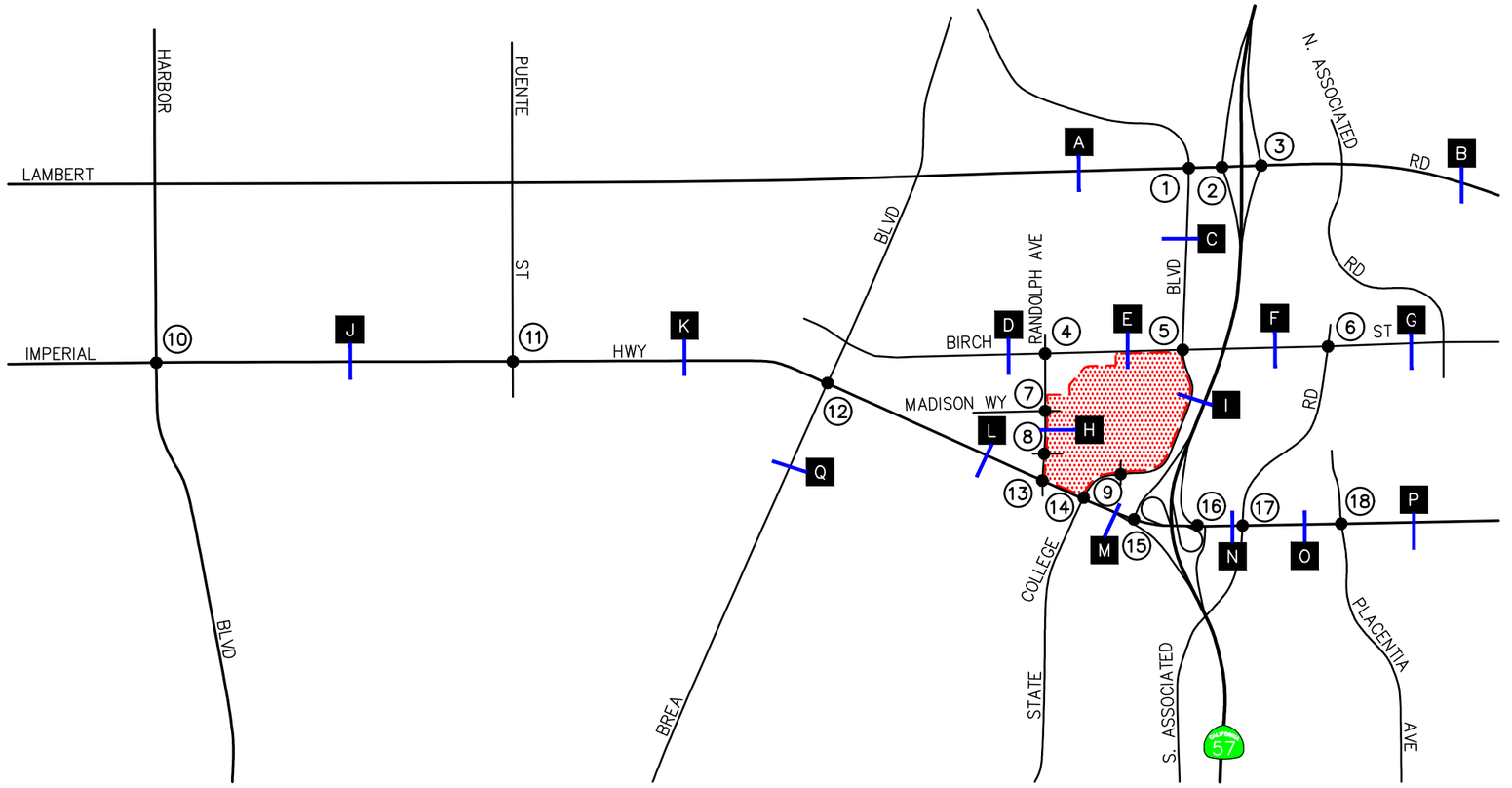
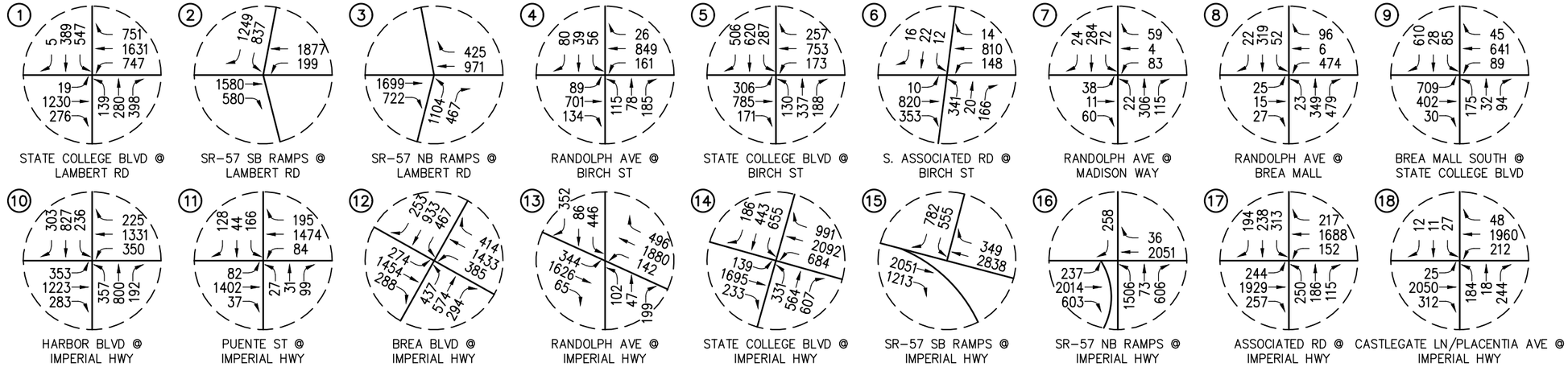
LOCATION	VOLUME
A	46,736
B	39,969
C	26,799
D	22,389
E	21,352
F	29,716
G	28,719
H	9,604
I	16,722
J	50,954
K	67,586
L	66,129
M	86,744
N	64,507
O	61,555
P	61,541
Q	36,953





n:\4000\2194099 - brea mall expansion & improvement, brea\dwg\4099 prn base.dwg LDP 14:17:08 04-14-2022 kopulsky

LINSCOTT LAW & GREENSPAN engineers

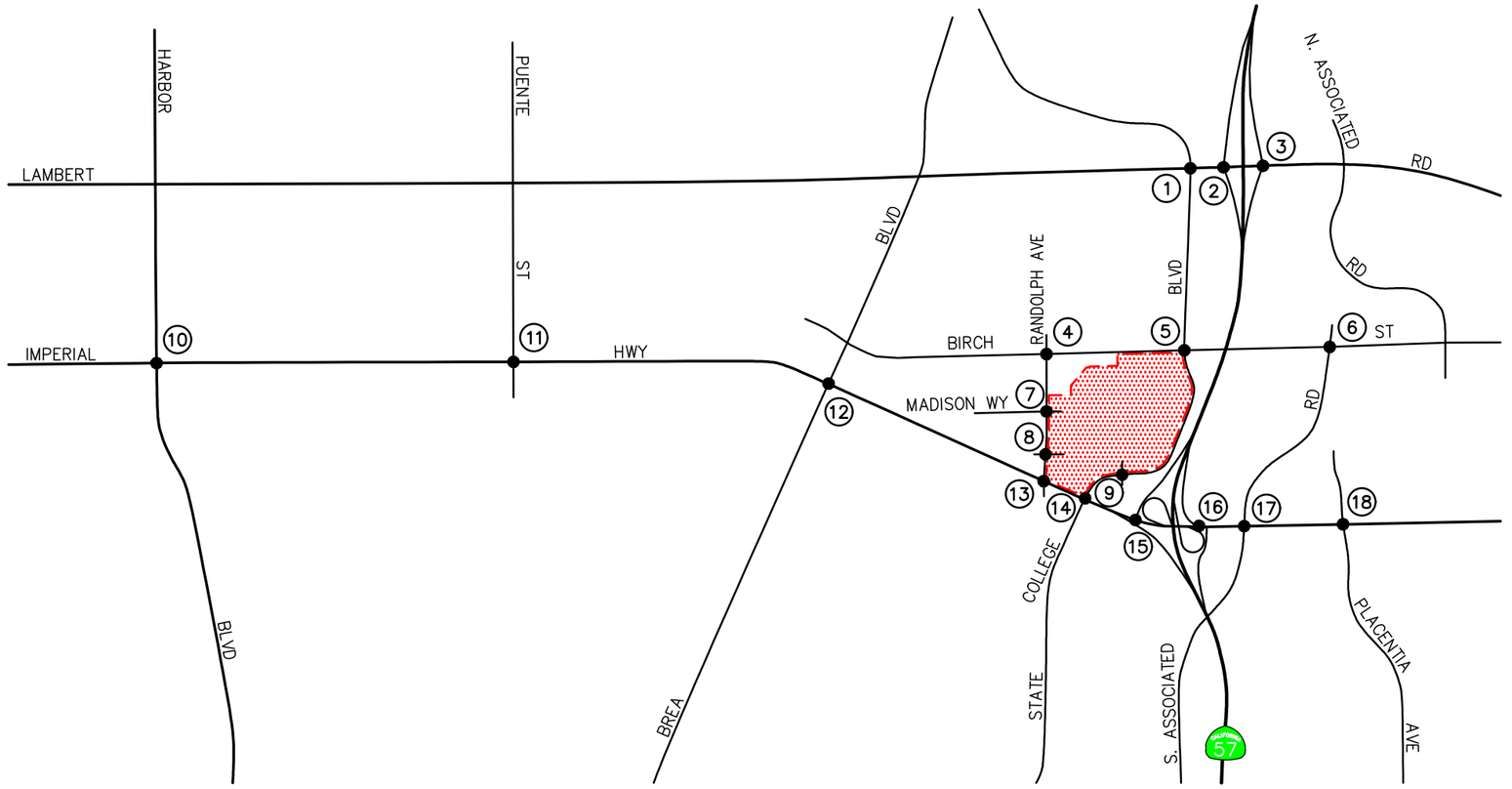
N NO SCALE

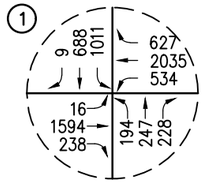
KEY
(#) = STUDY INTERSECTION
= STUDY ROADWAY SEGMENT
= BREA MALL

FIGURE 6-10

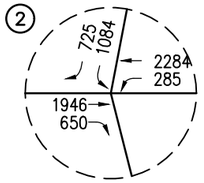
YEAR 2026 WEEKEND (SATURDAY) MIDDAY PEAK HOUR AND DAILY CUMULATIVE TRAFFIC VOLUMES WITH PROJECT

BREA MALL EXPANSION & IMPORVEMENTS, BREA

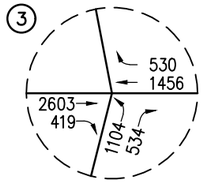




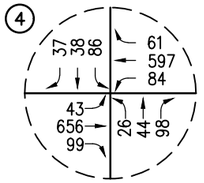
STATE COLLEGE BLVD @ LAMBERT RD



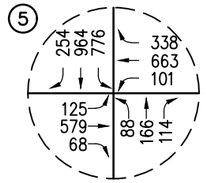
SR-57 SB RAMPS @ LAMBERT RD



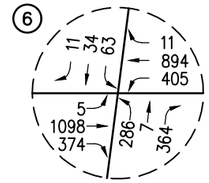
SR-57 NB RAMPS @ LAMBERT RD



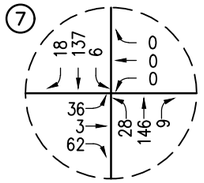
RANDOLPH AVE @ BIRCH ST



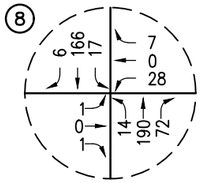
STATE COLLEGE BLVD @ BIRCH ST



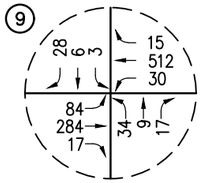
S. ASSOCIATED RD @ BIRCH ST



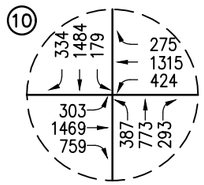
RANDOLPH AVE @ MADISON WAY



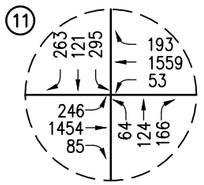
RANDOLPH AVE @ BREA MALL



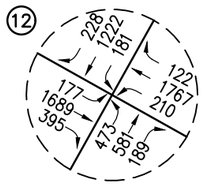
BREA MALL SOUTH @ STATE COLLEGE BLVD



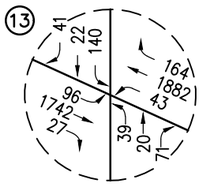
HARBOR BLVD @ IMPERIAL HWY



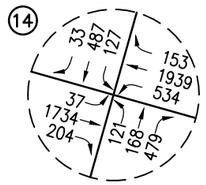
PUENTE ST @ IMPERIAL HWY



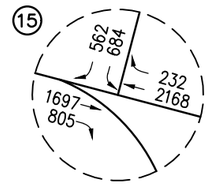
BREA BLVD @ IMPERIAL HWY



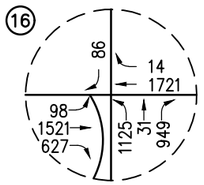
RANDOLPH AVE @ IMPERIAL HWY



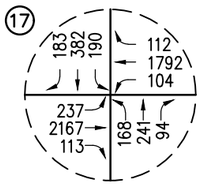
STATE COLLEGE BLVD @ IMPERIAL HWY



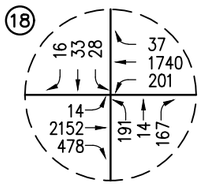
SR-57 SB RAMPS @ IMPERIAL HWY



SR-57 NB RAMPS @ IMPERIAL HWY



ASSOCIATED RD @ IMPERIAL HWY



CASTLEGATE LN/PLACENTIA AVE @ IMPERIAL HWY

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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

(#) = STUDY INTERSECTION

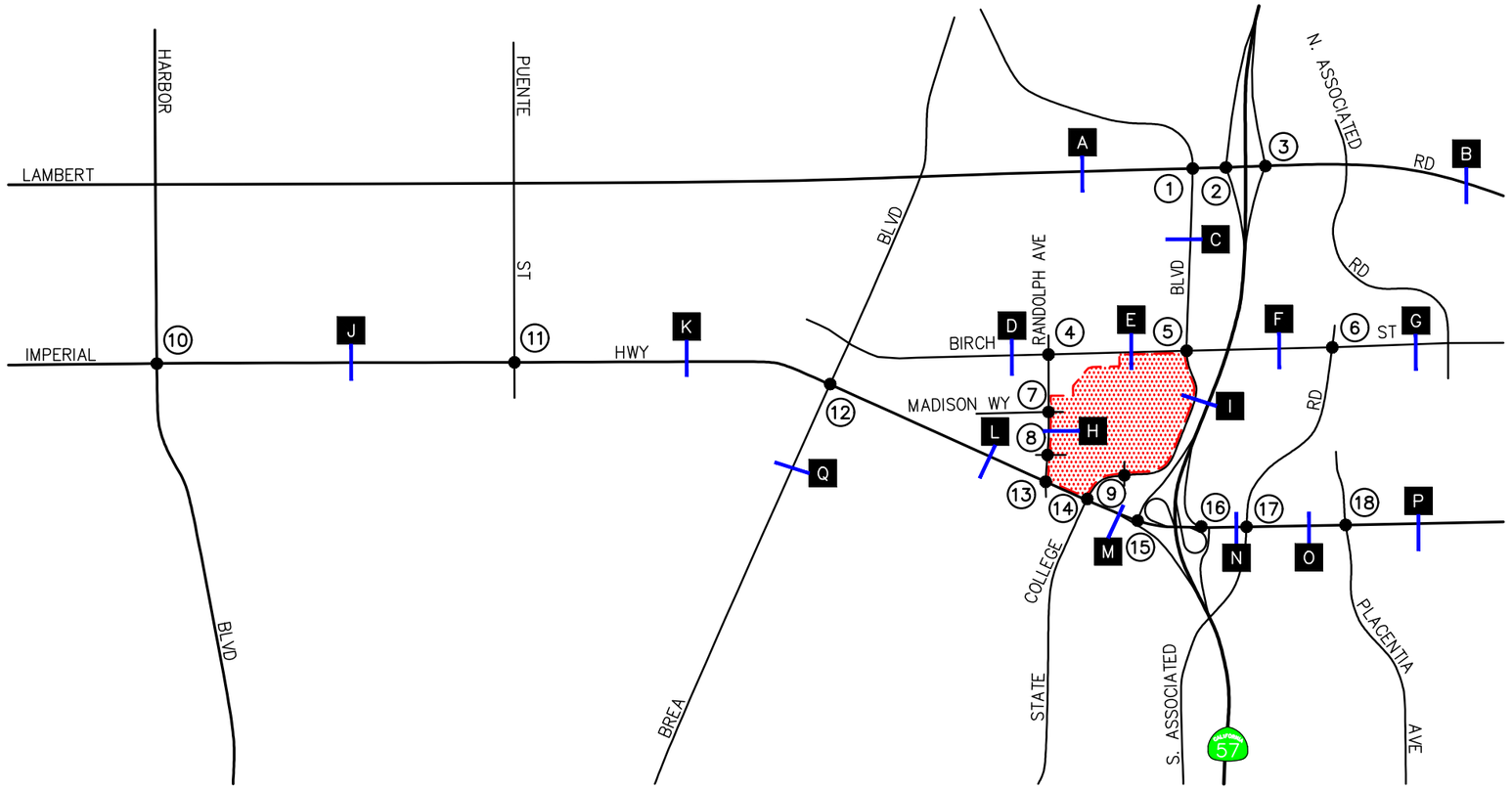
= BREA MALL

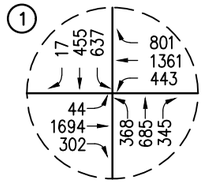
FIGURE 6-11

YEAR 2045 WEEKDAY AM PEAK HOUR TRAFFIC VOLUMES

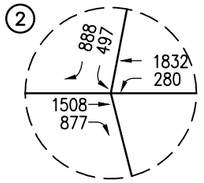
BREA MALL EXPANSION & IMPORVEMENTS, BREA

LOCATION	VOLUME
A	48,023
B	44,299
C	27,539
D	22,993
E	25,259
F	32,087
G	31,041
H	9,031
I	17,059
J	51,943
K	66,632
L	63,499
M	91,120
N	68,434
O	65,482
P	66,711
Q	37,557

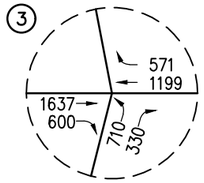




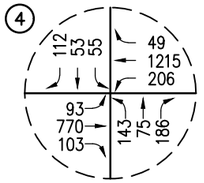
STATE COLLEGE BLVD @ LAMBERT RD



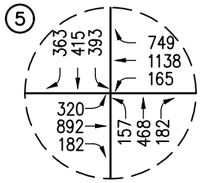
SR-57 SB RAMPS @ LAMBERT RD



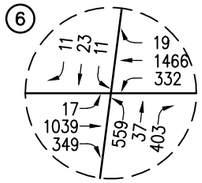
SR-57 NB RAMPS @ LAMBERT RD



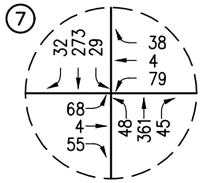
RANDOLPH AVE @ BIRCH ST



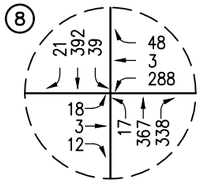
STATE COLLEGE BLVD @ BIRCH ST



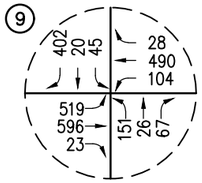
S. ASSOCIATED RD @ BIRCH ST



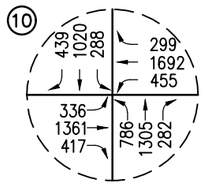
RANDOLPH AVE @ MADISON WAY



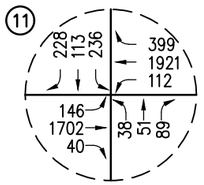
RANDOLPH AVE @ BREA MALL



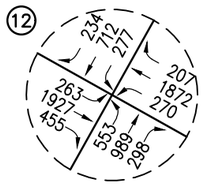
BREA MALL SOUTH @ STATE COLLEGE BLVD



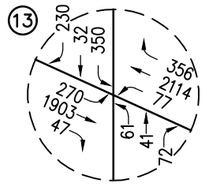
HARBOR BLVD @ IMPERIAL HWY



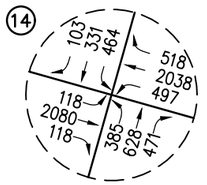
PUENTE ST @ IMPERIAL HWY



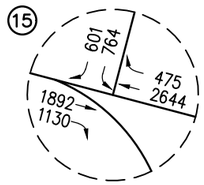
BREA BLVD @ IMPERIAL HWY



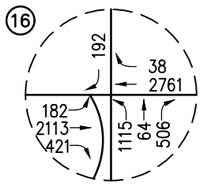
RANDOLPH AVE @ IMPERIAL HWY



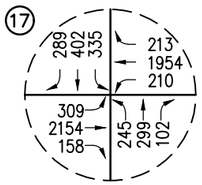
STATE COLLEGE BLVD @ IMPERIAL HWY



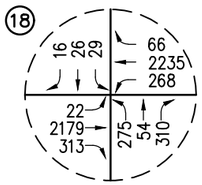
SR-57 SB RAMPS @ IMPERIAL HWY



SR-57 NB RAMPS @ IMPERIAL HWY



ASSOCIATED RD @ IMPERIAL HWY



CASTLEGATE LN/PLACENTIA AVE @ IMPERIAL HWY

n:\4000\2194099 - brea mall expansion & improvement, brea\dwg\4099 prn base.dwg LDP 14:17:08 04-14-2022 kopulsky

LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

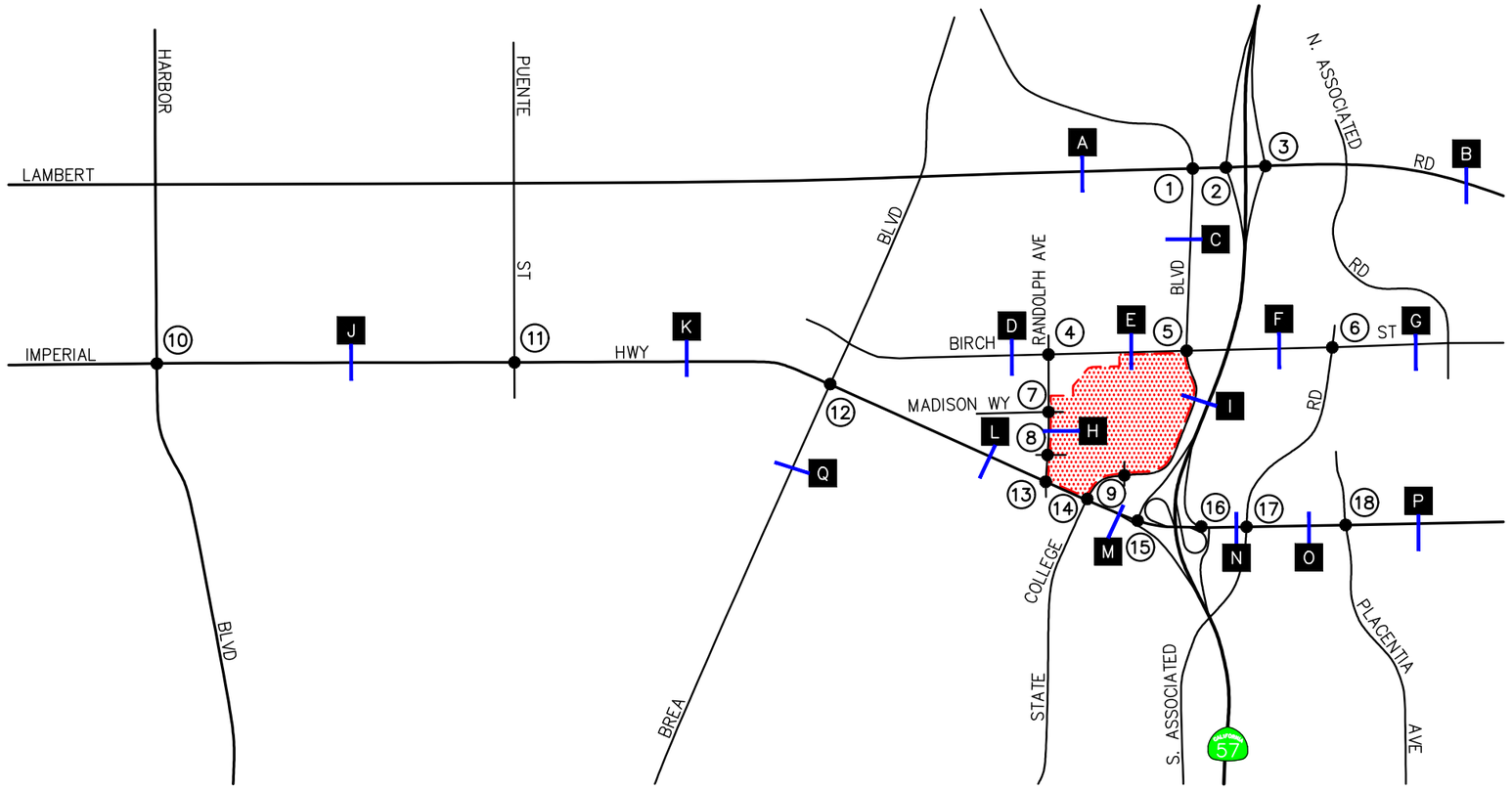
KEY
(#) = STUDY INTERSECTION
= STUDY ROADWAY SEGMENT
= BREA MALL

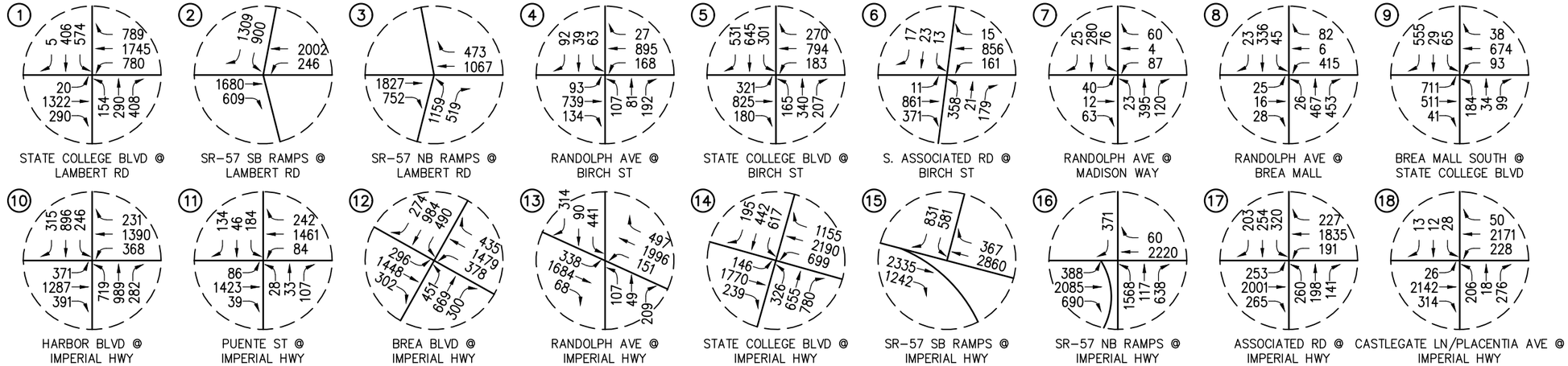
FIGURE 6-12

YEAR 2045 WEEKDAY PM PEAK HOUR AND DAILY TRAFFIC VOLUMES

BREA MALL EXPANSION & IMPORVEMENTS, BREA

LOCATION	VOLUME
A	49,936
B	44,355
C	27,938
D	23,464
E	22,534
F	31,367
G	30,481
H	9,263
I	17,410
J	54,098
K	69,377
L	66,237
M	88,426
N	65,610
O	64,329
P	63,741
Q	37,217





LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

(#) = STUDY INTERSECTION

[#] = STUDY ROADWAY SEGMENT

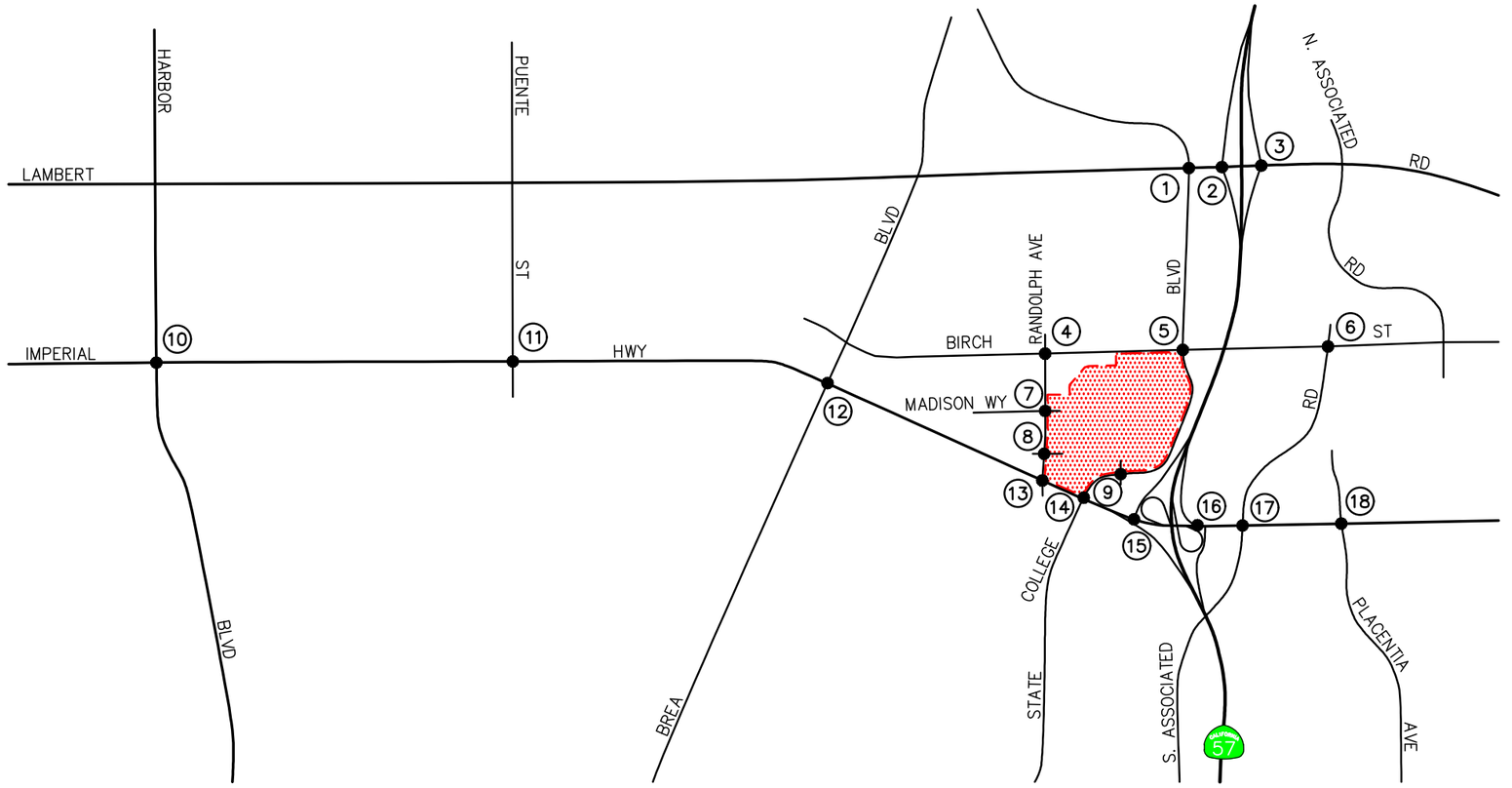
= BREA MALL

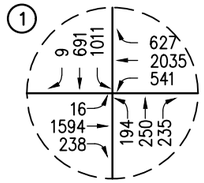
FIGURE 6-13

YEAR 2045 WEEKEND (SATURDAY) MIDDAY PEAK HOUR AND DAILY TRAFFIC VOLUMES

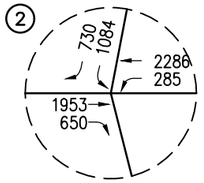
BREA MALL EXPANSION & IMPORVEMENTS, BREA

n:\4000\2194099 - brea mall expansion & improvement, brea\dwg\4099 prn base.dwg LDP 14:17:08 04-14-2022 kopulsky

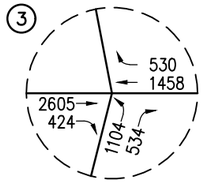




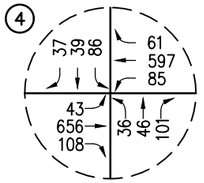
STATE COLLEGE BLVD @ LAMBERT RD



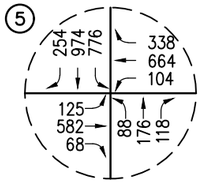
SR-57 SB RAMPS @ LAMBERT RD



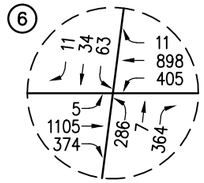
SR-57 NB RAMPS @ LAMBERT RD



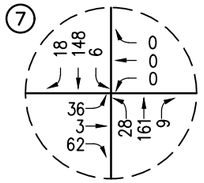
RANDOLPH AVE @ BIRCH ST



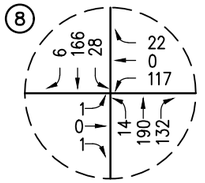
STATE COLLEGE BLVD @ BIRCH ST



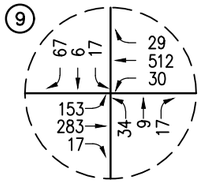
S. ASSOCIATED RD @ BIRCH ST



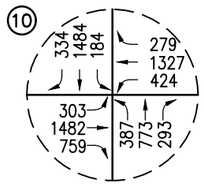
RANDOLPH AVE @ MADISON WAY



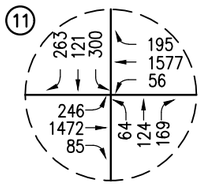
RANDOLPH AVE @ BREA MALL



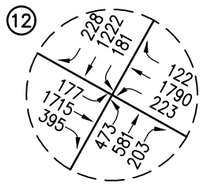
BREA MALL SOUTH @ STATE COLLEGE BLVD



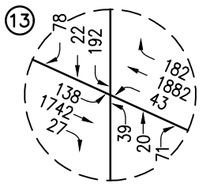
HARBOR BLVD @ IMPERIAL HWY



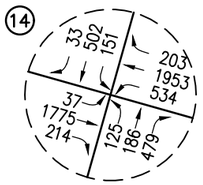
PUENTE ST @ IMPERIAL HWY



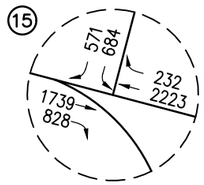
BREA BLVD @ IMPERIAL HWY



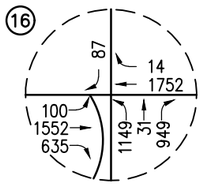
RANDOLPH AVE @ IMPERIAL HWY



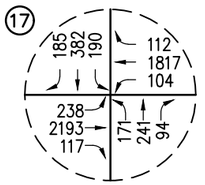
STATE COLLEGE BLVD @ IMPERIAL HWY



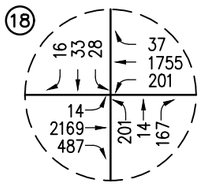
SR-57 SB RAMPS @ IMPERIAL HWY



SR-57 NB RAMPS @ IMPERIAL HWY



ASSOCIATED RD @ IMPERIAL HWY



CASTLEGATE LN/PLACENTIA AVE @ IMPERIAL HWY

n:\4000\2194099 - brea mall expansion & improvement, brea\dwg\4099 prn base.dwg LDP 14:17:08 04-14-2022 kopulsky

LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

(#) = STUDY INTERSECTION

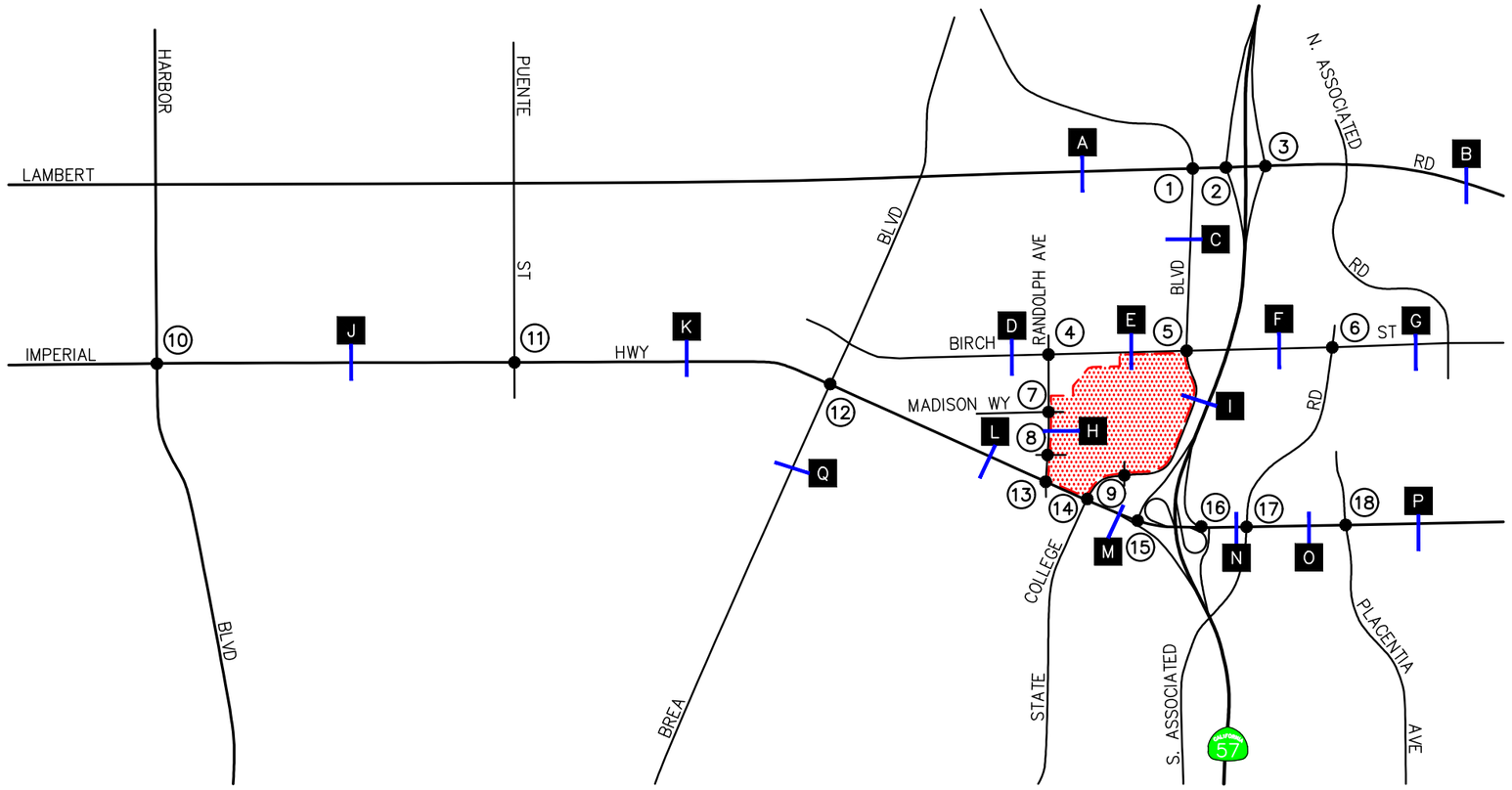
= BREA MALL

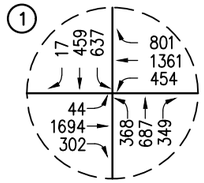
FIGURE 6-14

YEAR 2045 WEEKDAY AM PEAK HOUR TRAFFIC VOLUMES WITH PROJECT

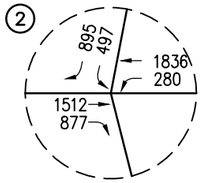
BREA MALL EXPANSION & IMPORVEMENTS, BREA

LOCATION	VOLUME
A	*48,023*
B	*44,351*
C	*27,748*
D	*23,195*
E	*25,294*
F	*32,197*
G	*31,151*
H	*9,888*
I	*17,343*
J	*52,310*
K	*67,143*
L	*64,330*
M	*92,435*
N	*69,065*
O	*65,999*
P	*67,030*
Q	*37,838*

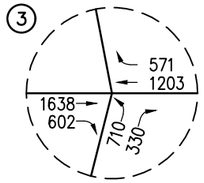




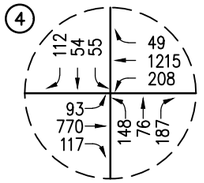
1 STATE COLLEGE BLVD @ LAMBERT RD



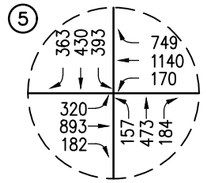
2 SR-57 SB RAMPS @ LAMBERT RD



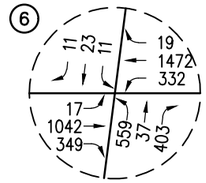
3 SR-57 NB RAMPS @ LAMBERT RD



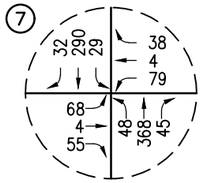
4 RANDOLPH AVE @ BIRCH ST



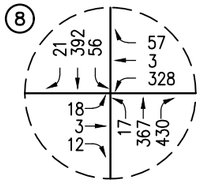
5 STATE COLLEGE BLVD @ BIRCH ST



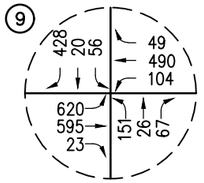
6 S. ASSOCIATED RD @ BIRCH ST



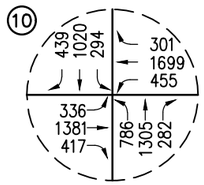
7 RANDOLPH AVE @ MADISON WAY



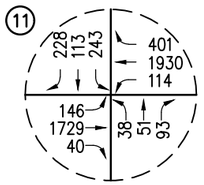
8 RANDOLPH AVE @ BREA MALL



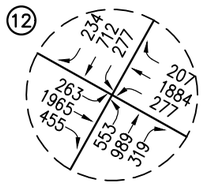
9 BREA MALL SOUTH @ STATE COLLEGE BLVD



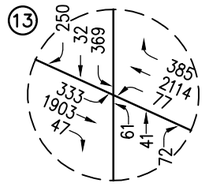
10 HARBOR BLVD @ IMPERIAL HWY



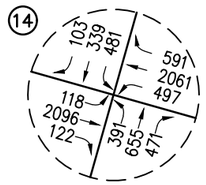
11 PUENTE ST @ IMPERIAL HWY



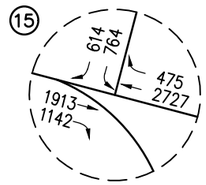
12 BREA BLVD @ IMPERIAL HWY



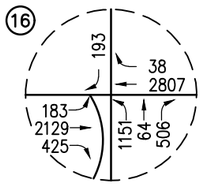
13 RANDOLPH AVE @ IMPERIAL HWY



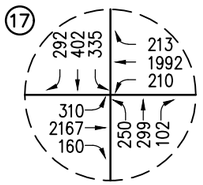
14 STATE COLLEGE BLVD @ IMPERIAL HWY



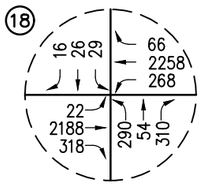
15 SR-57 SB RAMPS @ IMPERIAL HWY



16 SR-57 NB RAMPS @ IMPERIAL HWY



17 ASSOCIATED RD @ IMPERIAL HWY



18 CASTLEGATE LN/PLACENTIA AVE @ IMPERIAL HWY

LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

(#) = STUDY INTERSECTION

= STUDY ROADWAY SEGMENT

= BREA MALL

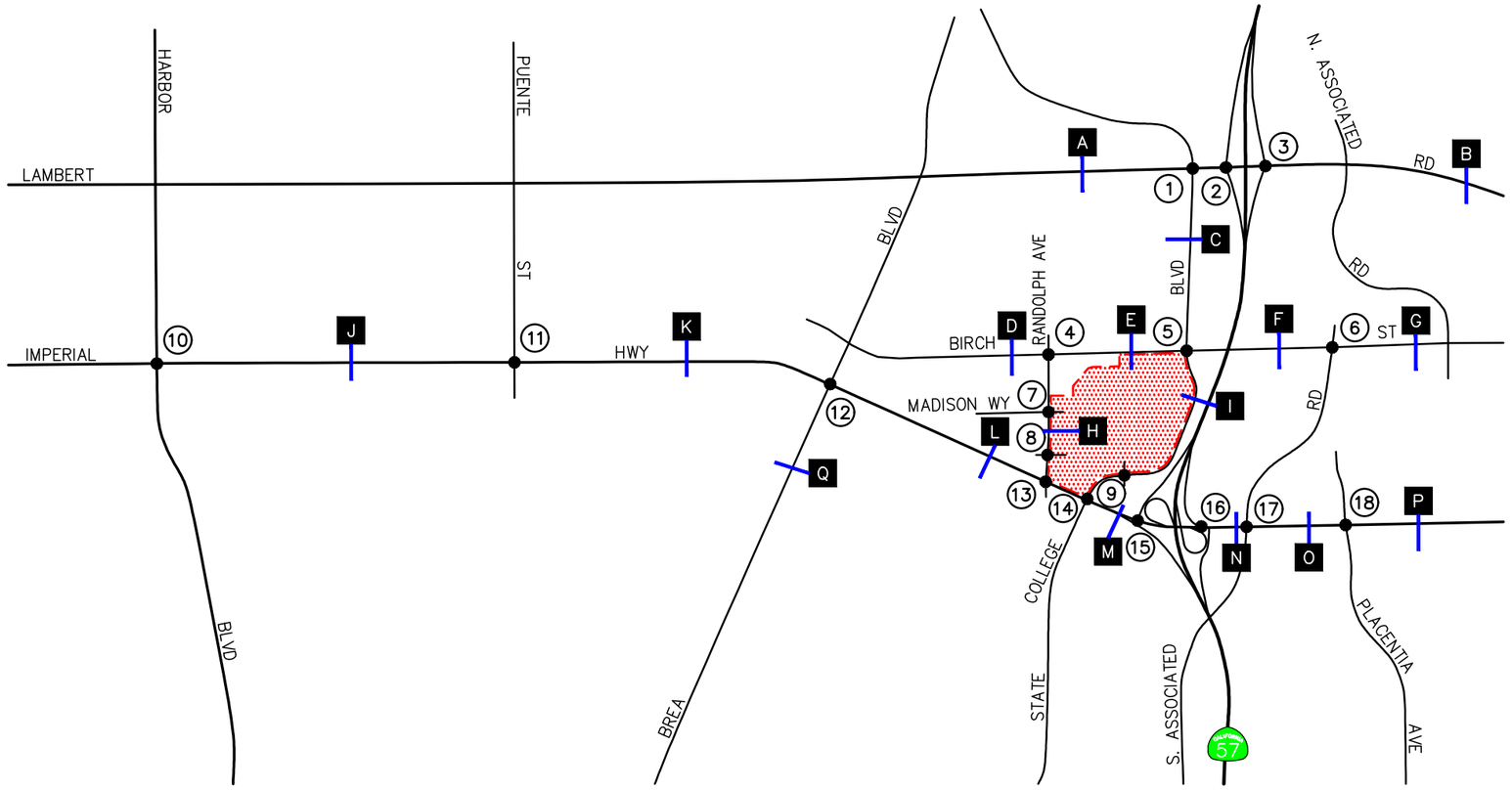
FIGURE 6-15

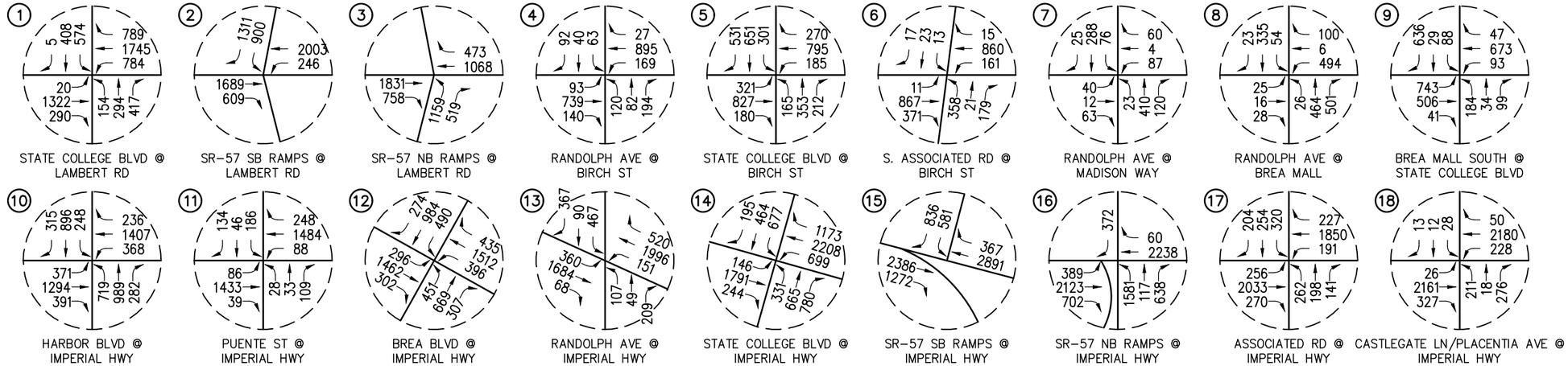
YEAR 2045 WEEKDAY PM PEAK HOUR AND DAILY TRAFFIC VOLUMES WITH PROJECT

BREA MALL EXPANSION & IMPORVEMENTS, BREA

n:\4000\2194099 - brea mall expansion & improvement, brea\dwg\4099 prn base.dwg LDP 14:17:08 04-14-2022 kopulsky

LOCATION	VOLUME
A	49,936
B	44,402
C	28,129
D	23,647
E	22,566
F	31,466
G	30,580
H	10,045
I	17,669
J	54,433
K	69,842
L	66,995
M	89,624
N	66,186
O	64,800
P	64,031
Q	37,473





n:\4000\2194099 - brea mall expansion & improvement, brea\dwg\4099 prn base.dwg LDP 14:17:08 04-14-2022 kopulsky

LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

(#) = STUDY INTERSECTION

[#] = STUDY ROADWAY SEGMENT

= BREA MALL

FIGURE 6-16

YEAR 2045 WEEKEND (SATURDAY) MIDDAY PEAK HOUR AND DAILY TRAFFIC VOLUMES WITH PROJECT

BREA MALL EXPANSION & IMPORVEMENTS, BREA

7.0 TRAFFIC ANALYSIS METHODOLOGY

The relative implications of the proposed Project added traffic volumes during the weekday AM peak hour and PM peak hour and weekend (Saturday) Midday peak hour was evaluated based on analysis of future operating conditions at the eighteen (18) key study intersections, without, then with, the proposed Project. The previously discussed capacity analysis procedures were utilized to investigate the future volume-to-capacity relationships and service level characteristics at each study intersection. The significance of the potential degradation to the service level at each key intersection due to the Project was then evaluated using the following traffic criteria.

7.1 LOS Criteria and Thresholds

7.1.1 *City of Brea*

For the ICU analysis, the need for potential Project-related improvements will be assessed based on the following criteria:

- The Project causes an intersection operating at LOS D or better to degrade to LOS E or F, or
- The Project increases traffic demand at a signalized study intersection by 0.020 or greater and the intersection is forecast to operate at LOS E or F.

For the HCM analysis, the need for potential Project-related improvements will be assessed based on the following criteria:

- The Project causes one or more study intersections operating at LOS D or better to degrade to LOS E or F, or
- The Project causes a change in control delay of 4 seconds for intersections already operating at LOS E, or
- The Project causes a change in control delay of 2 seconds for intersections already operating at LOS F.

7.1.2 *City of La Habra*

For the ICU analysis, LOS D is the acceptable condition that should be maintained during the morning and evening peak commute hours on all intersections within the City of La Habra, except those on the CMPHS of Orange County, where LOS E is defined in the CMP for Orange County as the acceptable limit and is acceptable for State Highway intersections. However, LOS D is considered acceptable at the intersection of Harbor Boulevard at Imperial Highway in order to be conservative. A degraded intersection service level is considered to be significant if the Project causes an intersection to degrade to LOS E or F, or if the Project increases traffic demand at a signalized study intersection by 0.010 or greater and the intersection is forecast to operate at LOS E or F.

7.1.3 *City of Fullerton*

The City of Fullerton considers a degraded intersection service level to be significant if the project causes an intersection at LOS D or better to degrade to LOS E or F. Per the City of Fullerton traffic study guidelines, peak hour intersection operating conditions were evaluated using the *Highway Capacity Manual* (HCM) Operations methodology.

7.2 Traffic Analysis Scenarios

The following scenarios are those for which volume/capacity calculations have been performed at the eighteen (18) key intersections for existing plus project, near-term (Year 2026) and long-term (Year 2045) traffic conditions:

1. Existing Baseline (Existing + Fully Occupied Mall) Traffic Conditions;
2. Scenario (2) with Recommended Improvements, if necessary;
3. Near-Term (Year 2026) Background Traffic Conditions (Existing plus Ambient Growth plus Related Projects);
4. Near-Term (Year 2026) Background Plus Project Traffic Conditions;
5. Scenario (5) with improvements to be implemented as conditions of approval (COA), if necessary;
6. Long-Term Buildout Traffic Conditions;
7. Long-Term Buildout Plus Project Traffic Conditions; and
8. Scenario (8) with improvements to be implemented as conditions of approval (COA), if necessary.

7.3 City of Brea Nexus Program

To satisfy the AB 1600 legislative requirement, development fees have been established to fund future traffic improvements within the City of Brea. Ensuring that every development project contributes a fair share of transportation improvements in the community, the City has introduced the "Transportation Improvement Nexus Program". In 2011, the Nexus Program was updated to reflect transportation needs and incorporate capacity improvements in an orderly fashion. The program ensures all future development with the City of Brea contributes on a fair share basis.

8.0 PEAK HOUR INTERSECTION CAPACITY ANALYSIS

8.1 Year 2026 Traffic Conditions - ICU

Table 8-1 summarizes the peak hour Level of Service results at the eighteen (18) key study intersections evaluated under ICU analysis for the Year 2026 horizon year. The first column (1) of ICU/LOS values in *Table 8-1* presents a summary of existing Weekday AM, Weekday PM, and Weekend (Saturday) Midday peak hour traffic conditions. The second column (2) lists projected cumulative traffic conditions (existing plus ambient plus related projects traffic) based on existing intersection geometry, but without any traffic generated from the proposed Project. The third column (3) presents forecast Year 2026 near-term traffic conditions with the addition of Project traffic. The fourth column (4) shows the increase in ICU value due to the added peak hour Project trips and indicates whether the traffic associated with the Project will exceed the LOS thresholds mentioned in this report. The fifth column (5) presents the resultant level of service with the inclusion of recommended traffic improvements, where needed, to achieve an acceptable level of service.

It should be noted that the intersections of SR-57 SB Ramps at Lambert Road and SR-57 NB Ramps at Lambert Road include planned SR-57 Lambert Road Interchange project improvements.

8.1.1 *Year 2026 Cumulative Traffic Conditions - ICU*

An analysis of future (Year 2026) background traffic conditions indicates that one (1) of the eighteen (18) key study intersections is forecast to operate at unacceptable levels of service during the Weekday AM, Weekday PM, and/or Weekend (Saturday) Midday peak hours under ICU analysis. The remaining seventeen (17) key study intersections are forecast to continue to operate at an acceptable LOS D or better based on the LOS criteria identified in this report. The locations identified below are forecast to operate at unacceptable levels of service:

	AM Peak Hour		PM Peak Hour		Weekend Midday Peak Hour	
Key Intersection	**ICU**	**LOS**	**ICU**	**LOS**	**ICU**	**LOS**
14. State College Boulevard at Imperial Highway	--	--	0.937	E	1.185	F

8.1.2 *Year 2026 Cumulative Plus Project Conditions - ICU*

Review of columns (3) and (4) of *Table 8-1* indicates that one (1) of the eighteen (18) key study intersections will continue to operate at unacceptable levels of services during the Weekday PM peak hour and Weekend (Saturday) Midday peak hour when compared to the LOS standards specified in this report. The intersections forecast to operate adversely are as follows:

					Weekend	
	AM Peak Hour		PM Peak Hour		Midday Peak Hour	
Key Intersection	ICU	LOS	ICU	LOS	ICU	LOS
14. State College Boulevard at Imperial Highway	--	--	0.948	E	1.219	F

However, as shown in column (5) of *Table 8-1*, the implementation of recommended improvements at the intersection offsets the effect to LOS due to added Project-related traffic volumes. After implementation of the recommended improvements at the intersection are forecast to operate at better service levels than pre-Project conditions.

Appendix C also presents the near-term ICU/LOS calculations for the eighteen (18) key study intersections.

TABLE 8-1

YEAR 2026 PEAK HOUR INTERSECTION CAPACITY ANALYSIS - ICU

Study Intersection	Minimum Acceptable LOS	Time Period	(1) Existing Traffic Conditions		(2) Year 2026 Traffic Conditions		(3) Year 2026 Plus Project Traffic Conditions		(4) Exceed LOS Thresholds		(5) Year 2026 Plus Project with Improvements Traffic Conditions	
			ICU	LOS	ICU	LOS	ICU	LOS	Increase	Yes/No	ICU	LOS
1. State College Boulevard at Lambert Road	D	AM	0.703	C	0.784	C	0.788	C	0.004	No	--	--
		PM	0.676	B	0.787	C	0.792	C	0.005	No	--	--
		Sat MD	0.679	B	0.781	C	0.785	C	0.004	No	--	--
2. SR-57 SB Ramps at Lambert Road	D	AM	0.749	C	0.810	D	0.812	D	0.002	No	--	--
		PM	0.614	B	0.671	B	0.674	B	0.003	No	--	--
		Sat MD	0.730	C	0.785	C	0.786	C	0.001	No	--	--
3. SR-57 NB Ramps at Lambert Road	D	AM	0.820	D	0.869	D	0.869	D	0.000	No	--	--
		PM	0.568	A	0.571	A	0.572	A	0.001	No	--	--
		Sat MD	0.686	B	0.729	C	0.731	C	0.002	No	--	--
4. Randolph Avenue at Birch Street	D	AM	0.352	A	0.385	A	0.390	A	0.005	No	--	--
		PM	0.566	A	0.611	B	0.614	B	0.003	No	--	--
		Sat MD	0.468	A	0.529	A	0.532	A	0.003	No	--	--
5. State College Boulevard at Birch Street[36]	D	AM	0.529	A	0.609	B	0.611	B	0.002	No	--	--
		PM	0.673	B	0.783	C	0.788	C	0.005	No	--	--
		Sat MD	0.633	B	0.729	C	0.731	C	0.002	No	--	--

Notes:

- **Bold ICU/LOS** values indicate adverse service levels based on the City LOS standards.

[36] It should be noted the southbound approach at the intersection has recently been widened to accommodate an exclusive right-turn lane. The level of service analysis presented in this report does not include this recent improvement, however, it is anticipated that the intersection would continue to operate at similar, if not better, service levels as presented herein with the inclusion of the southbound right-turn lane.

TABLE 8-1 (CONTINUED)
YEAR 2026 PEAK HOUR INTERSECTION CAPACITY ANALYSIS - ICU

Study Intersection	Minimum Acceptable LOS	Time Period	(1) Existing Traffic Conditions		(2) Year 2026 Traffic Conditions		(3) Year 2026 Plus Project Traffic Conditions		(4) Exceed LOS Thresholds		(5) Year 2026 Plus Project with Improvements Traffic Conditions	
			ICU	LOS	ICU	LOS	ICU	LOS	Increase	Yes/No	ICU	LOS
6. S Associated Road at Birch Street	D	AM	0.619	B	0.662	B	0.664	B	0.002	No	--	--
		PM	0.619	B	0.667	B	0.668	B	0.001	No	--	--
		Sat MD	0.514	A	0.559	A	0.561	A	0.002	No	--	--
7. Randolph Avenue at Madison Way	D	AM	0.139	A	0.144	A	0.148	A	0.004	No	--	--
		PM	0.243	A	0.252	A	0.254	A	0.002	No	--	--
		Sat MD	0.291	A	0.302	A	0.307	A	0.005	No	--	--
8. Randolph Avenue at Brea Mall	D	AM	0.136	A	0.143	A	0.198	A	0.055	No	--	--
		PM	0.358	A	0.374	A	0.447	A	0.073	No	--	--
		Sat MD	0.449	A	0.493	A	0.517	A	0.024	No	--	--
9. Brea Mall South at State College Boulevard	D	AM	0.183	A	0.204	A	0.236	A	0.032	No	--	--
		PM	0.442	A	0.470	A	0.492	A	0.022	No	--	--
		Sat MD	0.588	A	0.621	B	0.671	B	0.050	No	--	--
10. Harbor Boulevard at Imperial Highway	D[37]	AM	0.790	C	0.840	D	0.842	D	0.002	No	--	--
		PM	0.770	C	0.870	D	0.874	D	0.004	No	--	--
		Sat MD	0.681	B	0.730	C	0.731	C	0.001	No	--	--

Notes:

- **Bold ICU/LOS** values indicate adverse service levels based on the City LOS standards.

[37] According to City of La Habra guidelines, LOS E is acceptable at this location but is shown as LOS D to be conservative.

TABLE 8-1 (CONTINUED)
YEAR 2026 PEAK HOUR INTERSECTION CAPACITY ANALYSIS - ICU

Study Intersection	Minimum Acceptable LOS	Time Period	(1) Existing Traffic Conditions		(2) Year 2026 Traffic Conditions		(3) Year 2026 Plus Project Traffic Conditions		(4) Exceed LOS Thresholds		(5) Year 2026 Plus Project with Improvements Traffic Conditions	
			ICU	LOS	ICU	LOS	ICU	LOS	Increase	Yes/No	ICU	LOS
11. Puente Street at Imperial Highway	D	AM	0.573	A	0.651	B	0.659	B	0.008	No	--	--
		PM	0.589	A	0.650	B	0.658	B	0.008	No	--	--
		Sat MD	0.477	A	0.536	A	0.543	A	0.007	No	--	--
12. Brea Boulevard at Imperial Highway	D	AM	0.787	C	0.865	D	0.870	D	0.005	No	--	--
		PM	0.773	C	0.847	D	0.856	D	0.009	No	--	--
		Sat MD	0.779	C	0.843	D	0.851	D	0.008	No	--	--
13. Randolph Avenue at Imperial Highway	D	AM	0.420	A	0.484	A	0.512	A	0.028	No	--	--
		PM	0.647	B	0.709	C	0.739	C	0.030	No	--	--
		Sat MD	0.720	C	0.857	D	0.895	D	0.038	No	--	--
14. State College Boulevard at Imperial Highway	D	AM	0.701	C	0.765	C	0.785	C	0.020	No	0.759	C[38]
		PM	0.862	D	**0.937**	**E**	**0.948**	**E**	0.011	No	0.853	D[38]
		Sat MD	**1.092**	**F**	**1.185**	**F**	**1.219**	**F**	**0.034**	**Yes**	**1.084**	**F[38]**
15. SR-57 SB Ramps at Imperial Highway	D	AM	0.575	A	0.655	B	0.668	B	0.013	No	--	--
		PM	0.705	C	0.766	C	0.785	C	0.019	No	--	--
		Sat MD	0.779	C	0.862	D	0.869	D	0.007	No	--	--

Notes:

- **Bold ICU/LOS** values indicate adverse service levels based on the City LOS standards.

[38] Please note that the recommended improvement at this intersection takes into consideration the on-ramp modifications and restriping the no. 3 eastbound through lane along Imperial Highway at the SR-57 SB On-Ramp to a shared through/right-turn lane. In the event that Caltrans does not proceed with this improvement, the intersection would result in the following levels of service: *AM Peak Hour = 0.785, LOS C; PM Peak Hour = 0.948, LOS E, Sat. Midday Peak Hour = 1.219, LOS F.*

TABLE 8-1 (CONTINUED)
YEAR 2026 PEAK HOUR INTERSECTION CAPACITY ANALYSIS - ICU

Study Intersection	Minimum Acceptable LOS	Time Period	(1) Existing Traffic Conditions		(2) Year 2026 Traffic Conditions		(3) Year 2026 Plus Project Traffic Conditions		(4) Exceed LOS Thresholds		(5) Year 2026 Plus Project with Improvements Traffic Conditions	
			ICU	LOS	ICU	LOS	ICU	LOS	Increase	Yes/No	ICU	LOS
16. SR-57 NB Ramps at Imperial Highway	D	AM	0.570	A	0.618	B	0.627	B	0.009	No	--	--
		PM	0.712	C	0.756	C	0.768	C	0.012	No	--	--
		Sat MD	0.831	D	0.813	D	0.818	D	0.005	No	--	--
17. Associated Road at Imperial Highway	D	AM	0.704	C	0.746	C	0.753	C	0.007	No	--	--
		PM	0.780	C	0.834	D	0.838	D	0.004	No	--	--
		Sat MD	0.713	C	0.774	C	0.782	C	0.008	No	--	--
18. Castlegate Lane/ Placentia Avenue at Imperial Highway	D	AM	0.601	B	0.643	B	0.646	B	0.003	No	--	--
		PM	0.699	B	0.753	C	0.754	C	0.001	No	--	--
		Sat MD	0.675	B	0.732	C	0.736	C	0.004	No	--	--

Notes:

- **Bold ICU/LOS** values indicate adverse service levels based on the City LOS standards.

8.2 Year 2026 Traffic Conditions - HCM

Table 8-2 summarizes the peak hour Level of Service results at the eighteen (18) key study intersections evaluated under HCM analysis for the Year 2026 horizon year. The first column (1) of HCM/LOS values in *Table 8-2* presents a summary of existing Weekday AM, Weekday PM, and Weekend (Saturday) Midday peak hour traffic conditions. The second column (2) lists projected cumulative traffic conditions (existing plus ambient plus related projects traffic) based on existing intersection geometry, but without any traffic generated from the proposed Project. The third column (3) presents forecast Year 2026 near-term traffic conditions with the addition of Project traffic. The fourth column (4) shows the increase in delay due to the added peak hour Project trips and indicates whether the traffic associated with the Project will exceed the LOS thresholds mentioned in this report. The fifth column (5) presents the resultant level of service with the inclusion of recommended traffic improvements, where needed, to achieve an acceptable level of service.

It should be noted that the intersections of SR-57 SB Ramps at Lambert Road and SR-57 NB Ramps at Lambert Road include planned SR-57 Lambert Road Interchange project improvements.

8.2.1 *Year 2026 Cumulative Traffic Conditions - HCM*

An analysis of future (Year 2026) background traffic conditions indicates that one (1) of the eighteen (18) key study intersections is forecast to operate at unacceptable levels of service during the Weekday AM, Weekday PM, and/or Weekend (Saturday) Midday peak hours under HCM analysis. The remaining seventeen (17) key study intersections are forecast to continue to operate at acceptable LOS based on the LOS criteria defined in this report. The locations identified below are forecast to operate at unacceptable levels of service:

	AM Peak Hour		PM Peak Hour		Weekend Midday Peak Hour	
Key Intersection	**Delay (sec/veh)**	**LOS**	**Delay (sec/veh)**	**LOS**	**Delay (sec/veh)**	**LOS**
14. State College Boulevard at Imperial Highway	--	--	62.6	E	148.2	F

8.2.2 *Year 2026 Cumulative Plus Project Conditions - HCM*

Review of columns (3) and (4) of *Table 8-2* indicates that one (1) of the eighteen (18) key study intersections will continue to operate at unacceptable levels of services during the Weekday PM peak hour and Weekend (Saturday) Midday peak hour when compared to the LOS standards specified in this report. The intersections forecast to operate adversely are as follows:

	AM Peak Hour		PM Peak Hour		Weekend Midday Peak Hour	
Key Intersection	**Delay (sec/veh)**	**LOS**	**Delay (sec/veh)**	**LOS**	**Delay (sec/veh)**	**LOS**
14. State College Boulevard at Imperial Highway	--	--	67.4	E	165.2	F

However, as shown in column (5) of *Table 8-2*, the implementation of recommended improvements at the intersection offsets the Project's increment. After implementation of the recommended improvements at the intersection are forecast to operate at better service levels than pre-Project conditions.

Appendix D also presents the near-term HCM/LOS calculations for the eighteen (18) key study intersections.

TABLE 8-2

YEAR 2026 PEAK HOUR INTERSECTION CAPACITY ANALYSIS - HCM

Study Intersection	Minimum Acceptable LOS	Time Period	(1) Existing Traffic Conditions		(2) Year 2026 Traffic Conditions		(3) Year 2026 Plus Project Traffic Conditions		(4) Exceed LOS Thresholds		(5) Year 2026 Plus Project with Improvements Traffic Conditions	
			Delay (s/v)	LOS	Delay (s/v)	LOS	Delay (s/v)	LOS	Increase	Yes/No	Delay (s/v)	LOS
1. State College Boulevard at Lambert Road	D	AM	34.0	C	37.5	D	37.7	D	0.2	No	--	--
		PM	36.3	D	42.1	D	42.2	D	0.1	No	--	--
		Sat MD	35.7	D	44.6	D	45.1	D	0.5	No	--	--
2. SR-57 SB Ramps at Lambert Road	D	AM	27.1	C	29.0	C	29.1	C	0.1	No	--	--
		PM	19.5	B	19.8	B	19.8	B	0.0	No	--	--
		Sat MD	25.1	C	26.2	C	29.1	C	2.9	No	--	--
3. SR-57 NB Ramps at Lambert Road	D	AM	28.0	C	27.0	C	27.1	C	0.1	No	--	--
		PM	19.9	B	15.0	B	15.0	B	0.0	No	--	--
		Sat MD	24.9	C	19.1	B	19.2	B	0.1	No	--	--
4. Randolph Avenue at Birch Street	D	AM	14.2	B	14.1	B	14.4	B	0.3	No	--	--
		PM	30.1	C	30.7	C	32.1	C	1.4	No	--	--
		Sat MD	20.0	C	19.7	B	20.0	B	0.3	No	--	--
5. State College Boulevard at Birch Street[39]	D	AM	37.6	D	40.6	D	40.7	D	0.1	No	--	--
		PM	30.6	C	35.5	D	35.9	D	0.4	No	--	--
		Sat MD	37.3	D	41.3	D	41.3	D	0.0	No	--	--

Notes:

- **Bold HCM/LOS** values indicate adverse service levels based on the City LOS standards.
- s/v = seconds per vehicle (delay)

[39] It should be noted the southbound approach at the intersection has recently been widened to accommodate an exclusive right-turn lane. The level of service analysis presented in this report does not include this recent improvement, however, it is anticipated that the intersection would continue to operate at similar, if not better, service levels as presented herein with the inclusion of the southbound right-turn lane.

TABLE 8-2 (CONTINUED)
YEAR 2026 PEAK HOUR INTERSECTION CAPACITY ANALYSIS - HCM

Study Intersection	Minimum Acceptable LOS	Time Period	(1) Existing Traffic Conditions		(2) Year 2026 Traffic Conditions		(3) Year 2026 Plus Project Traffic Conditions		(4) Exceed LOS Thresholds		(5) Year 2026 Plus Project with Improvements Traffic Conditions	
			Delay (s/v)	LOS	Delay (s/v)	LOS	Delay (s/v)	LOS	Increase	Yes/No	Delay (s/v)	LOS
6. S Associated Road at Birch Street	D	AM	26.1	C	28.3	C	28.4	C	0.1	No	--	--
		PM	25.6	C	28.2	C	28.5	C	0.3	No	--	--
		Sat MD	22.3	C	21.2	C	21.2	C	0.0	No	--	--
7. Randolph Avenue at Madison Way	D	AM	17.3	B	17.0	B	16.3	B	0.0[40]	No	--	--
		PM	19.0	B	18.8	B	18.5	B	0.0[40]	No	--	--
		Sat MD	20.5	C	20.7	C	20.4	C	0.0[40]	No	--	--
8. Randolph Avenue at Brea Mall	D	AM	8.2	A	8.0	A	17.3	B	9.3	No	--	--
		PM	18.3	B	18.4	B	19.4	B	1.0	No	--	--
		Sat MD	22.7	C	23.6	C	26.0	C	2.4	No	--	--
9. Brea Mall South at State College Boulevard	D	AM	15.6	B	15.4	B	20.3	C	4.9	No	--	--
		PM	30.7	C	30.3	C	31.2	C	0.9	No	--	--
		Sat MD	32.8	C	32.8	C	33.6	C	0.8	No	--	--
10. Harbor Boulevard at Imperial Highway	D[41]	AM	40.4	D	45.1	D	46.2	D	1.1	No	--	--
		PM	41.7	D	47.2	D	47.5	D	0.3	No	--	--
		Sat MD	38.7	D	39.9	D	39.9	D	0.0	No	--	--

Notes:

- **Bold HCM/LOS** values indicate adverse service levels based on the City LOS standards.
- s/v = seconds per vehicle (delay)

[40] Theoretical negative increase, which is possible with HCM calculations, are denoted as an increase of 0.0 s/v.

[41] According to City of La Habra guidelines, LOS E is acceptable at this location but is shown as LOS D to be conservative.

TABLE 8-2 (CONTINUED)
YEAR 2026 PEAK HOUR INTERSECTION CAPACITY ANALYSIS - HCM

Study Intersection	Minimum Acceptable LOS	Time Period	(1) Existing Traffic Conditions		(2) Year 2026 Traffic Conditions		(3) Year 2026 Plus Project Traffic Conditions		(4) Exceed LOS Thresholds		(5) Year 2026 Plus Project with Improvements Traffic Conditions	
			Delay (s/v)	LOS	Delay (s/v)	LOS	Delay (s/v)	LOS	Increase	Yes/No	Delay (s/v)	LOS
11. Puente Street at Imperial Highway	D	AM	18.1	B	20.2	C	20.6	C	0.4	No	--	--
		PM	18.5	B	19.0	B	19.2	B	0.2	No	--	--
		Sat MD	13.0	B	14.1	B	14.2	B	0.1	No	--	--
12. Brea Boulevard at Imperial Highway	D	AM	40.2	D	46.8	D	48.0	D	1.2	No	--	--
		PM	37.5	D	41.6	D	42.0	D	0.4	No	--	--
		Sat MD	40.3	D	48.1	D	49.6	D	1.5	No	--	--
13. Randolph Avenue at Imperial Highway	D	AM	12.4	B	14.4	B	16.6	B	2.2	No	--	--
		PM	23.4	C	25.8	C	28.4	C	2.6	No	--	--
		Sat MD	36.2	D	45.3	D	52.9	D	7.6	No	--	--
14. State College Boulevard at Imperial Highway	D	AM	30.4	C	34.8	C	36.0	C	1.2	No	34.1	C[42]
		PM	**56.0**	**E**	**62.6**	**E**	**67.4**	**E**	**4.8**	**Yes**	45.0	D[42]
		Sat MD	**112.0**	**F**	**148.2**	**F**	**165.2**	**F**	**17.0**	**Yes**	**108.6**	**F[42]**
15. SR-57 SB Ramps at Imperial Highway	D	AM	15.3	B	16.1	B	16.2	B	0.1	No	--	--
		PM	15.9	B	16.9	B	17.3	B	0.4	No	--	--
		Sat MD	17.5	B	20.8	C	21.1	C	0.3	No	--	--

Notes:

- **Bold HCM/LOS** values indicate adverse service levels based on the City LOS standards.
- s/v = seconds per vehicle (delay)

[42] Please note that the recommended improvement at this intersection takes into consideration the on-ramp modifications and restriping the no. 3 eastbound through lane along Imperial Highway at the SR-57 SB On-Ramp to a shared through/right-turn lane. In the event that Caltrans does not proceed with this improvement, the intersection would result in the following levels of service: *AM Peak Hour = 36.0 s/v, LOS C; PM Peak Hour = 67.3 s/v, LOS E, Sat. Midday Peak Hour = 165.0 s/v, LOS F.*

TABLE 8-2 (CONTINUED)
YEAR 2026 PEAK HOUR INTERSECTION CAPACITY ANALYSIS - HCM

Study Intersection	Minimum Acceptable LOS	Time Period	(1) Existing Traffic Conditions		(2) Year 2026 Traffic Conditions		(3) Year 2026 Plus Project Traffic Conditions		(4) Exceed LOS Thresholds		(5) Year 2026 Plus Project with Improvements Traffic Conditions	
			Delay (s/v)	LOS	Delay (s/v)	LOS	Delay (s/v)	LOS	Increase	Yes/No	Delay (s/v)	LOS
16. SR-57 NB Ramps at Imperial Highway	D	AM	21.2	C	22.4	C	22.6	C	0.2	No	--	--
		PM	22.5	C	22.9	C	23.5	C	0.6	No	--	--
		Sat MD	36.5	D	34.0	C	34.0	C	0.0	No	--	--
17. Associated Road at Imperial Highway	D	AM	27.2	C	32.5	C	32.7	C	0.2	No	--	--
		PM	40.7	D	46.2	D	46.3	D	0.1	No	--	--
		Sat MD	34.5	C	35.6	D	37.3	D	1.7	No	--	--
18. Castlegate Lane/ Placentia Avenue at Imperial Highway	D	AM	18.1	B	19.1	B	19.2	B	0.1	No	--	--
		PM	24.0	C	26.7	C	26.9	C	0.2	No	--	--
		Sat MD	20.8	C	23.4	C	23.6	C	0.2	No	--	--

Notes:

- **Bold HCM/LOS** values indicate adverse service levels based on the City LOS standards.
- s/v = seconds per vehicle (delay)

8.3 Year 2045 Traffic Conditions - ICU

Table 8-3 summarizes the peak hour Level of Service results at the eighteen (18) key study intersections evaluated under ICU analysis for the Year 2045. The first column (1) of ICU/LOS values in *Table 8-3* presents a summary of existing Weekday AM, Weekday PM, and Weekend (Saturday) Midday peak hour traffic conditions. The second column (2) lists projected Year 2045 long-term traffic conditions based on existing intersection geometry, but without any traffic generated from the proposed Project. The third column (3) presents forecast Year 2045 long-term traffic conditions with the addition of Project traffic. The fourth column (4) shows the increase in ICU value due to the added peak hour Project trips and indicates whether the traffic associated with the Project will exceed the LOS standards defined in this report. The fifth column (5) presents the resultant level of service with the inclusion of recommended traffic improvements, where needed, to achieve an acceptable level of service.

It should be noted that the intersections of SR-57 SB Ramps at Lambert Road and SR-57 NB Ramps at Lambert Road include planned SR-57 Lambert Road Interchange project improvements.

8.3.1 *Year 2045 Traffic Conditions - ICU*

An analysis of long-term (Year 2045) background traffic conditions indicates that five (5) of the eighteen (18) key study intersections is forecast to operate at unacceptable levels of service during the Weekday AM, Weekday PM, and/or Weekend (Saturday) Midday peak hours under ICU analysis. The remaining thirteen (13) key study intersections are forecast to continue to operate at an acceptable LOS D or better based on the LOS criteria identified in this report. The locations identified below are forecast to operate at unacceptable levels of service:

	AM Peak Hour		PM Peak Hour		Weekend Midday Peak Hour	
Key Intersection	**ICU**	**LOS**	**ICU**	**LOS**	**ICU**	**LOS**
10. Harbor Boulevard at Imperial Highway	1.026	F	1.022	F	--	--
12. Brea Boulevard at Imperial Highway	0.947	E	--	--	--	--
14. State College Boulevard at Imperial Highway	--	--	1.028	F	1.318	F
16. SR-57 NB Ramps at Imperial Highway	--	--	--	--	0.955	E
17. Associated Road at Imperial Highway	--	--	0.935	E	--	--

8.3.2 *Year 2045 Plus Project Traffic Conditions - ICU*

Review of columns (3) and (4) of *Table 8-3* indicates that five (5) of the eighteen (18) key study intersections will continue to operate at unacceptable levels of services during the Weekday PM peak hour and Weekend (Saturday) Midday peak hour when compared to the LOS standards specified in this report. The intersections forecast to operate adversely are as follows:

	AM Peak Hour		PM Peak Hour		Weekend Midday Peak Hour	
Key Intersection	**ICU**	**LOS**	**ICU**	**LOS**	**ICU**	**LOS**
10. Harbor Boulevard at Imperial Highway	1.026	F	1.026	F	--	--
12. Brea Boulevard at Imperial Highway	0.952	E	--	--	--	--
14. State College Boulevard at Imperial Highway	--	--	1.040	F	1.352	F
16. SR-57 NB Ramps at Imperial Highway	--	--	--	--	0.960	F
17. Associated Road at Imperial Highway	--	--	0.940	E	--	--

However, as shown in column (5) of *Table 8-3*, implementation of recommended improvements at the intersections of State College Blvd at Imperial Highway (Intersection #14) offsets the Project's increment. After implementation of the recommended improvements, the intersection is forecast to operate at better service levels than pre-Project conditions. It should be noted that the intersection of Harbor Blvd at Imperial Highway (Intersection #10), Brea Blvd at Imperial Highway (Intersection #12), SR-57 NB Ramps at Imperial (intersection #16) and Associated Road at Imperial Highway (Intersection #17) does not satisfy the criteria defined in this report to require improvements.

Appendix C presents the long-term ICU/LOS calculations for the eighteen (18) key study intersections.

TABLE 8-3

YEAR 2045 PEAK HOUR INTERSECTION CAPACITY ANALYSIS - ICU

Study Intersection	Minimum Acceptable LOS	Time Period	(1) Existing Traffic Conditions		(2) Year 2045 Traffic Conditions		(3) Year 2045 Plus Project Traffic Conditions		(4) Exceed LOS Thresholds		(5) Year 2045 Plus Project with Improvements Traffic Conditions	
			ICU	LOS	ICU	LOS	ICU	LOS	Increase	Yes/No	ICU	LOS
1. State College Boulevard at Lambert Road	D	AM	0.703	C	0.867	D	0.871	D	0.004	No	--	--
		PM	0.676	B	0.863	D	0.868	D	0.005	No	--	--
		Sat MD	0.679	B	0.822	D	0.826	D	0.004	No	--	--
2. SR-57 SB Ramps at Lambert Road	D	AM	0.749	C	0.834	D	0.836	D	0.002	No	--	--
		PM	0.614	B	0.689	B	0.692	B	0.003	No	--	--
		Sat MD	0.730	C	0.837	D	0.839	D	0.002	No	--	--
3. SR-57 NB Ramps at Lambert Road	D	AM	0.820	D	0.885	D	0.885	D	0.000	No	--	--
		PM	0.568	A	0.588	A	0.588	A	0.000	No	--	--
		Sat MD	0.686	B	0.770	C	0.772	C	0.002	No	--	--
4. Randolph Avenue at Birch Street	D	AM	0.352	A	0.430	A	0.435	A	0.005	No	--	--
		PM	0.566	A	0.643	B	0.647	B	0.004	No	--	--
		Sat MD	0.468	A	0.556	A	0.559	A	0.003	No	--	--
5. State College Boulevard at Birch Street[43]	D	AM	0.529	A	0.670	B	0.673	B	0.003	No	--	--
		PM	0.673	B	0.860	D	0.864	D	0.004	No	--	--
		Sat MD	0.633	B	0.772	C	0.774	C	0.002	No	--	--

Notes:

- **Bold ICU/LOS** values indicate adverse service levels based on the City LOS standards.

[43] It should be noted the southbound approach at the intersection has recently been widened to accommodate an exclusive right-turn lane. The level of service analysis presented in this report does not include this recent improvement, however, it is anticipated that the intersection would continue to operate at similar, if not better, service levels as presented herein with the inclusion of the southbound right-turn lane.

TABLE 8-3 (CONTINUED)
YEAR 2045 PEAK HOUR INTERSECTION CAPACITY ANALYSIS - ICU

Study Intersection	Minimum Acceptable LOS	Time Period	(1) Existing Traffic Conditions		(2) Year 2045 Traffic Conditions		(3) Year 2045 Plus Project Traffic Conditions		(4) Exceed LOS Thresholds		(5) Year 2045 Plus Project with Improvements Traffic Conditions	
			ICU	LOS	ICU	LOS	ICU	LOS	Increase	Yes/No	ICU	LOS
6. S Associated Road at Birch Street	D	AM	0.619	B	0.734	C	0.736	C	0.002	No	--	--
		PM	0.619	B	0.740	C	0.741	C	0.001	No	--	--
		Sat MD	0.514	A	0.589	A	0.590	A	0.001	No	--	--
7. Randolph Avenue at Madison Way	D	AM	0.139	A	0.150	A	0.154	A	0.004	No	--	--
		PM	0.243	A	0.268	A	0.270	A	0.002	No	--	--
		Sat MD	0.291	A	0.341	A	0.346	A	0.005	No	--	--
8. Randolph Avenue at Brea Mall	D	AM	0.136	A	0.148	A	0.203	A	0.055	No	--	--
		PM	0.358	A	0.392	A	0.444	A	0.052	No	--	--
		Sat MD	0.449	A	0.519	A	0.566	A	0.047	No	--	--
9. Brea Mall South at State College Boulevard	D	AM	0.183	A	0.245	A	0.277	A	0.032	No	--	--
		PM	0.442	A	0.491	A	0.512	A	0.021	No	--	--
		Sat MD	0.588	A	0.650	B	0.700	C	0.050	No	--	--
10. Harbor Boulevard at Imperial Highway	D[44]	AM	0.790	C	**1.026**	**F**	**1.026**	**F**	0.000	No	--	--
		PM	0.770	C	**1.022**	**F**	**1.026**	**F**	0.004	No	--	--
		Sat MD	0.681	B	0.884	D	0.885	D	0.001	No	--	--

Notes:

- **Bold ICU/LOS** values indicate adverse service levels based on the City LOS standards.

[44] According to City of La Habra guidelines, LOS E is acceptable at this location but is shown as LOS D to be conservative.

TABLE 8-3 (CONTINUED)
YEAR 2045 PEAK HOUR INTERSECTION CAPACITY ANALYSIS - ICU

Study Intersection	Minimum Acceptable LOS	Time Period	(1) Existing Traffic Conditions		(2) Year 2045 Traffic Conditions		(3) Year 2045 Plus Project Traffic Conditions		(4) Exceed LOS Thresholds		(5) Year 2045 Plus Project with Improvements Traffic Conditions	
			ICU	LOS	ICU	LOS	ICU	LOS	Increase	Yes/No	ICU	LOS
11. Puente Street at Imperial Highway	D	AM	0.573	A	0.772	C	0.780	C	0.008	No	--	--
		PM	0.589	A	0.704	C	0.712	C	0.008	No	--	--
		Sat MD	0.477	A	0.558	A	0.565	A	0.007	No	--	--
12. Brea Boulevard at Imperial Highway	D	AM	0.787	C	**0.947**	**E**	**0.952**	**E**	0.005	No	--	--
		PM	0.773	C	0.879	D	0.889	D	0.010	No	--	--
		Sat MD	0.779	C	0.867	D	0.875	D	0.008	No	--	--
13. Randolph Avenue at Imperial Highway	D	AM	0.420	A	0.515	A	0.545	A	0.030	No	--	--
		PM	0.647	B	0.734	C	0.765	C	0.031	No	--	--
		Sat MD	0.720	C	0.854	D	0.892	D	0.038	No	--	--
14. State College Boulevard at Imperial Highway	D	AM	0.701	C	0.837	D	0.857	D	0.020	No	0.826	D[45]
		PM	0.862	D	**1.028**	**F**	**1.040**	**F**	0.012	No	**0.941**	**E**[45]
		Sat MD	**1.092**	**F**	**1.318**	**F**	**1.352**	**F**	**0.034**	**Yes**	**1.242**	**F**[45]
15. SR-57 SB Ramps at Imperial Highway	D	AM	0.575	A	0.719	C	0.732	C	0.013	No	--	--
		PM	0.705	C	0.836	D	0.855	D	0.019	No	--	--
		Sat MD	0.779	C	0.888	D	0.895	D	0.007	No	--	--

Notes:

- **Bold ICU/LOS** values indicate adverse service levels based on the City LOS standards.

[45] Please note that the recommended improvement at this intersection takes into consideration the on-ramp modifications and restriping the no. 3 eastbound through lane along Imperial Highway at the SR-57 SB On-Ramp to a shared through/right-turn lane. In the event that Caltrans does not proceed with this improvement, the intersection would result in the following levels of service: *AM Peak Hour = 0.857, LOS D; PM Peak Hour = 1.040, LOS F, Sat. Midday Peak Hour = 1.352, LOS F.*

TABLE 8-3 (CONTINUED)
YEAR 2045 PEAK HOUR INTERSECTION CAPACITY ANALYSIS - ICU

Study Intersection	Minimum Acceptable LOS	Time Period	(1) Existing Traffic Conditions		(2) Year 2045 Traffic Conditions		(3) Year 2045 Plus Project Traffic Conditions		(4) Exceed LOS Thresholds		(5) Year 2045 Plus Project with Improvements Traffic Conditions	
			ICU	LOS	ICU	LOS	ICU	LOS	Increase	Yes/No	ICU	LOS
16. SR-57 NB Ramps at Imperial Highway	D	AM	0.570	A	0.672	B	0.682	B	0.010	No	--	--
		PM	0.712	C	0.816	D	0.829	D	0.013	No	--	--
		Sat MD	0.831	D	**0.955**	**E**	**0.960**	**E**	0.005	No	--	--
17. Associated Road at Imperial Highway	D	AM	0.704	C	0.832	D	0.839	D	0.007	No	--	--
		PM	0.780	C	**0.935**	**E**	**0.940**	**E**	0.005	No	--	--
		Sat MD	0.713	C	0.833	D	0.840	D	0.007	No	--	--
18. Castlegate Lane/ Placentia Avenue at Imperial Highway	D	AM	0.601	B	0.717	C	0.721	C	0.004	No	--	--
		PM	0.699	B	0.842	D	0.844	D	0.002	No	--	--
		Sat MD	0.675	B	0.783	C	0.787	C	0.004	No	--	--

Notes:
- **Bold ICU/LOS** values indicate adverse service levels based on the City LOS standards.

8.4 Year 2045 Traffic Conditions - HCM

Table 8-4 summarizes the peak hour Level of Service results at the eighteen (18) key study intersections evaluated under HCM analysis for the Year 2045. The first column (1) of HCM/LOS values in *Table 8-4* presents a summary of existing Weekday AM, Weekday PM, and Weekend (Saturday) Midday peak hour traffic conditions. The second column (2) lists projected Year 2045 long-term traffic conditions based on existing intersection geometry, but without any traffic generated from the proposed Project. The third column (3) presents forecast Year 2045 long-term traffic conditions with the addition of Project traffic. The fourth column (4) shows the increase in delay due to the added peak hour Project trips and indicates whether the traffic associated with the Project will exceed the LOS thresholds mentioned in this report. The fifth column (5) presents the resultant level of service with the inclusion of recommended traffic improvements, where needed, to achieve an acceptable level of service.

It should be noted that the intersections of SR-57 SB Ramps at Lambert Road and SR-57 NB Ramps at Lambert Road include planned SR-57 Lambert Road Interchange project improvements.

8.4.1 *Year 2045 Traffic Conditions - HCM*

Review of column (2) of *Table 8-4* shows that projected long-term (Year 2045) without Project traffic conditions indicates that two (2) of the eighteen (18) key study intersections are forecast to operate at unacceptable levels of service during the Weekday AM, Weekday PM, and/or Weekend (Saturday) Midday peak hours under HCM analysis. The remaining sixteen (16) key study intersections are forecast to continue to operate at acceptable LOS based on the LOS criteria defined in this report. The locations identified below are forecast to operate at unacceptable levels of service:

	AM Peak Hour		PM Peak Hour		Weekend Midday Peak Hour	
Key Intersection	**Delay (sec/veh)**	**LOS**	**Delay (sec/veh)**	**LOS**	**Delay (sec/veh)**	**LOS**
10. Harbor Boulevard at Imperial Highway	57.6	E	69.8	E	--	--
14. State College Boulevard at Imperial Highway	--	--	69.4	E	134.5	F

8.4.2 *Year 2045 Plus Project Traffic Conditions – HCM*

Review of columns (3) and (4) of *Table 8-4* indicates that two (2) of the eighteen (18) key study intersections will continue to operate at unacceptable levels of services during the Weekday PM peak hour and Weekend (Saturday) Midday peak hour when compared to the LOS standards specified in this report. The intersections forecast to operate adversely are as follows:

	AM Peak Hour		PM Peak Hour		Weekend Midday Peak Hour	
Key Intersection	**Delay (sec/veh)**	**LOS**	**Delay (sec/veh)**	**LOS**	**Delay (sec/veh)**	**LOS**
10. Harbor Boulevard at Imperial Highway	58.2	E	70.0	E	--	--
14. State College Boulevard at Imperial Highway	--	--	71.9	E	148.1	F

However, as shown in column (5) of *Table 8-6*, the implementation of recommended improvements at the intersection of State College Blvd at Imperial Highway (Intersection #14) offsets the Project's increment. After implementation of the recommended improvements at the intersection State College Blvd at Imperial Highway (Intersection #14) are forecast to operate at better service levels than pre-Project conditions. It should be noted that the intersection of Harbor Blvd at Imperial Highway (Intersection #10) does not satisfy the criteria defined in this report to require improvements.

Appendix D presents the long-term HCM/LOS calculations for the eighteen (18) key study intersections.

TABLE 8-4

YEAR 2045 PEAK HOUR INTERSECTION CAPACITY ANALYSIS - HCM

Study Intersection	Minimum Acceptable LOS	Time Period	(1) Existing Traffic Conditions		(2) Year 2045 Traffic Conditions		(3) Year 2045 Plus Project Traffic Conditions		(4) Exceed LOS Thresholds		(5) Year 2045 Plus Project with Improvements Traffic Conditions	
			Delay (s/v)	LOS	Delay (s/v)	LOS	Delay (s/v)	LOS	Increase	Yes/No	Delay (s/v)	LOS
1. State College Boulevard at Lambert Road	D	AM	34.0	C	39.9	D	40.2	D	0.3	No	--	--
		PM	36.3	D	41.9	D	44.0	D	2.1	No	--	--
		Sat MD	35.7	D	48.2	D	49.3	D	1.1	No	--	--
2. SR-57 SB Ramps at Lambert Road	D	AM	27.1	C	24.4	C	24.4	C	0.0	No	--	--
		PM	19.5	B	19.3	B	19.4	B	0.1	No	--	--
		Sat MD	25.1	C	30.2	C	30.2	C	0.0	No	--	--
3. SR-57 NB Ramps at Lambert Road	D	AM	28.0	C	22.1	C	22.1	C	0.0	No	--	--
		PM	19.9	B	13.6	B	13.6	B	0.0	No	--	--
		Sat MD	24.9	C	19.5	B	19.5	B	0.0	No	--	--
4. Randolph Avenue at Birch Street	D	AM	14.2	B	14.2	B	14.4	B	0.2	No	--	--
		PM	30.1	C	21.8	C	22.6	C	0.8	No	--	--
		Sat MD	20.0	C	18.9	B	19.1	B	0.2	No	--	--
5. State College Boulevard at Birch Street[46]	D	AM	37.6	D	40.4	D	40.5	D	0.1	No	--	--
		PM	30.6	C	37.7	D	38.1	D	0.4	No	--	--
		Sat MD	37.3	D	41.0	D	41.7	D	0.7	No	--	--

Notes:

- **Bold HCM/LOS** values indicate adverse service levels based on the City LOS standards.
- s/v = seconds per vehicle (delay)

[46] It should be noted the southbound approach at the intersection has recently been widened to accommodate an exclusive right-turn lane. The level of service analysis presented in this report does not include this recent improvement, however, it is anticipated that the intersection would continue to operate at similar, if not better, service levels as presented herein with the inclusion of the southbound right-turn lane.

TABLE 8-4 (CONTINUED)
YEAR 2045 PEAK HOUR INTERSECTION CAPACITY ANALYSIS - HCM

Study Intersection	Minimum Acceptable LOS	Time Period	(1) Existing Traffic Conditions		(2) Year 2045 Traffic Conditions		(3) Year 2045 Plus Project Traffic Conditions		(4) Exceed LOS Thresholds		(5) Year 2045 Plus Project with Improvements Traffic Conditions	
			Delay (s/v)	LOS	Delay (s/v)	LOS	Delay (s/v)	LOS	Increase	Yes/No	Delay (s/v)	LOS
6. S Associated Road at Birch Street	D	AM	26.1	C	26.8	C	26.8	C	0.0	No	--	--
		PM	25.6	C	28.9	C	28.9	C	0.0	No	--	--
		Sat MD	22.3	C	21.0	C	21.1	C	0.1	No	--	--
7. Randolph Avenue at Madison Way	D	AM	17.3	B	15.2	B	14.5	B	0.0[47]	No	--	--
		PM	19.0	B	16.5	B	16.2	B	0.0[47]	No	--	--
		Sat MD	20.5	C	17.1	B	16.8	B	0.0[47]	No	--	--
8. Randolph Avenue at Brea Mall	D	AM	8.2	A	6.1	A	13.5	B	7.4	No	--	--
		PM	18.3	B	17.4	B	18.3	B	0.9	No	--	--
		Sat MD	22.7	C	21.8	C	24.4	C	2.6	No	--	--
9. Brea Mall South at State College Boulevard	D	AM	15.6	B	12.8	B	17.1	B	4.3	No	--	--
		PM	30.7	C	27.8	C	30.9	C	3.1	No	--	--
		Sat MD	32.8	C	31.8	C	32.4	C	0.6	No	--	--
10. Harbor Boulevard at Imperial Highway	D[48]	AM	40.4	D	**57.6**	**E**	**58.2**	**E**	0.6	No	--	--
		PM	41.7	D	**69.8**	**E**	**70.0**	**E**	0.2	No	--	--
		Sat MD	38.7	D	52.7	D	53.4	D	0.7	No	--	--

Notes:

- **Bold HCM/LOS** values indicate adverse service levels based on the City LOS standards.
- s/v = seconds per vehicle (delay)

[47] Theoretical negative increase, which is possible with HCM calculations, are denoted as an increase of 0.0 s/v.

[48] According to City of La Habra guidelines, LOS E is acceptable at this location but is shown as LOS D to be conservative.

TABLE 8-4 (CONTINUED)

YEAR 2045 PEAK HOUR INTERSECTION CAPACITY ANALYSIS - HCM

Study Intersection	Minimum Acceptable LOS	Time Period	(1) Existing Traffic Conditions		(2) Year 2045 Traffic Conditions		(3) Year 2045 Plus Project Traffic Conditions		(4) Exceed LOS Thresholds		(5) Year 2045 Plus Project with Improvements Traffic Conditions	
			Delay (s/v)	LOS	Delay (s/v)	LOS	Delay (s/v)	LOS	Increase	Yes/No	Delay (s/v)	LOS
11. Puente Street at Imperial Highway	D	AM	18.1	B	21.1	C	21.2	C	0.1	No	--	--
		PM	18.5	B	16.6	B	16.8	B	0.2	No	--	--
		Sat MD	13.0	B	13.1	B	13.2	B	0.1	No	--	--
12. Brea Boulevard at Imperial Highway	D	AM	40.2	D	46.8	D	46.9	D	0.1	No	--	--
		PM	37.5	D	41.4	D	41.7	D	0.3	No	--	--
		Sat MD	40.3	D	44.2	D	45.0	D	0.8	No	--	--
13. Randolph Avenue at Imperial Highway	D	AM	12.4	B	13.2	B	15.1	B	1.9	No	--	--
		PM	23.4	C	24.6	C	26.8	C	2.2	No	--	--
		Sat MD	36.2	D	42.4	D	47.2	D	4.8	No	--	--
14. State College Boulevard at Imperial Highway	D	AM	30.4	C	36.0	D	37.5	D	1.5	No	34.7	C[49]
		PM	**56.0**	**E**	**69.4**	**E**	**71.9**	**E**	2.5	No	48.0	D[49]
		Sat MD	**112.0**	**F**	**134.5**	**F**	**148.1**	**F**	**13.6**	**Yes**	**107.4**	**F[49]**
15. SR-57 SB Ramps at Imperial Highway	D	AM	15.3	B	15.8	B	15.9	B	0.1	No	--	--
		PM	15.9	B	17.7	B	18.1	B	0.4	No	--	--
		Sat MD	17.5	B	20.4	C	20.7	C	0.3	No	--	--

Notes:

- **Bold HCM/LOS** values indicate adverse service levels based on the City LOS standards.
- s/v = seconds per vehicle (delay)

[49] Please note that the recommended improvement at this intersection takes into consideration the on-ramp modifications and restriping the no. 3 eastbound through lane along Imperial Highway at the SR-57 SB On-Ramp to a shared through/right-turn lane. In the event that Caltrans does not proceed with this improvement, the intersection would result in the following levels of service: *AM Peak Hour = 37.4 s/v, LOS D; PM Peak Hour = 71.9 s/v, LOS E, Sat. Midday Peak Hour = 148.0 s/v, LOS F.*

TABLE 8-4 (CONTINUED)
YEAR 2045 PEAK HOUR INTERSECTION CAPACITY ANALYSIS - HCM

Study Intersection	Minimum Acceptable LOS	Time Period	(1) Existing Traffic Conditions		(2) Year 2045 Traffic Conditions		(3) Year 2045 Plus Project Traffic Conditions		(4) Exceed LOS Thresholds		(5) Year 2045 Plus Project with Improvements Traffic Conditions	
			Delay (s/v)	LOS	Delay (s/v)	LOS	Delay (s/v)	LOS	Increase	Yes/No	Delay (s/v)	LOS
16. SR-57 NB Ramps at Imperial Highway	D	AM	21.2	C	25.0	C	25.4	C	0.4	No	--	--
		PM	22.5	C	26.1	C	26.1	C	0.0	No	--	--
		Sat MD	36.5	D	42.5	D	42.6	D	0.1	No	--	--
17. Associated Road at Imperial Highway	D	AM	27.2	C	33.1	C	33.3	C	0.2	No	--	--
		PM	40.7	D	46.6	D	48.5	D	1.9	No	--	--
		Sat MD	34.5	C	35.9	D	35.9	D	0.0	No	--	--
18. Castlegate Lane/ Placentia Avenue at Imperial Highway	D	AM	18.1	B	18.7	B	18.8	B	0.1	No	--	--
		PM	24.0	C	28.1	C	28.2	C	0.1	No	--	--
		Sat MD	20.8	C	23.5	C	23.7	C	0.2	No	--	--

Notes:

- **Bold HCM/LOS** values indicate adverse service levels based on the City LOS standards.
- s/v = seconds per vehicle (delay)

9.0 INTERSECTION VEHICLE QUEUEING EVALUATION

A queueing evaluation has been completed for the intersections of Randolph Avenue at Imperial Highway (Intersection No. 13) and State College Boulevard at Imperial Highway (Intersection No. 14) to assess if the stacking requirements for the turn pockets leading to and from the proposed Project site are adequate after the addition of Project traffic volumes.

The queuing evaluation was conducted for Year 2026 cumulative and Year 2045 buildout traffic conditions based on the Average Queue methodology, which calculates the average queue value in terms of number of vehicles per lane. At signalized intersections, the storage length for left-turn and right-turn lanes may be based on one and one-half (1½) to two (2) times the average number of vehicles that would store per signal cycle[50]. For the purposes of this traffic analysis, the minimum storage requirement for left-turn lanes and right-turn lanes was calculated by taking 1½ times the average queue length. (Minimum required storage = Q_{av} (feet) x 1.5). The storage lengths at unsignalized intersection locations are based on 95th Percentile methodology.

It should be noted that the Synchro software takes into consideration traffic volume data, lane configurations, traffic signal phasing and potential weaving between intersections in order to calculate the queues for each movement. The existing storage lengths were determined based on a review of aerial maps of the subject intersections obtained from Google Earth and field reviews conducted by LLG Engineers. An average vehicle length of 25 feet is assumed for the purposes of this analysis.

9.1 Year 2026 Traffic Conditions

Table 9-1 presents the AM, PM and Saturday Midday peak hour queueing analyses results for the two (2) study intersections for Year 2026. The first column (1) of *Table 9-1* presents the resultant queues for Year 2026 cumulative traffic conditions. The second column (2) presents the resultant queues for Year 2026 cumulative traffic conditions with the addition of Project traffic. The third column (3) presents the resultant queues with the inclusion of recommended traffic improvements, where needed.

9.1.1 *Year 2026 Cumulative Traffic Conditions*

Review of column (1) of *Table 9-1* indicates that one (1) of the two (2) study intersections have queues which exceed the provided storage capacity for one or more intersection approach under Year 2026 cumulative traffic conditions. The remaining study intersection has queues that are adequately accommodated by the provided storage space. The intersections/approaches with storage deficiencies include the following:

- Intersection No. 14: State College Boulevard at Imperial Highway
  - Southbound Left-Turn: PM Peak Hour and Saturday Midday Peak Hour
  - Westbound Right-Turn: Saturday Midday Peak Hour

[50] Source: Highway Design Manual, Intersections at Grade, page 400-9, CALTRANS

9.1.2 *Year 2026 Cumulative Plus Project Traffic Conditions*

Review of column (2) of *Table 9-1* indicates that one (1) of the two (2) study intersections have queues which exceed the provided storage capacity for one or more intersection approach with the addition of proposed Project traffic to Year 2026 cumulative traffic conditions. The remaining study intersection has queues that are adequately accommodated by the provided storage space. The intersections/approaches with storage deficiencies include the following:

- Intersection No. 14: State College Boulevard at Imperial Highway
  - Southbound Left-Turn: PM Peak Hour and Saturday Midday Peak Hour
  - Westbound Right-Turn: Saturday Midday Peak Hour

Review of column (3) of *Table 9-1* indicates that the southbound left-turn and westbound right turn at State College Boulevard at Imperial Highway (Intersection No. 14) exceeds the storage capacity and the added project trips would increase these movements by more than one vehicle. However, with the recommended improvements this intersection would operate better than pre-Project conditions for the southbound left-turn. It should be noted that the westbound right-turn has constraints that does not allow for any feasible improvements to be implemented. Therefore, the westbound right-turn pocket will continue to exceed the pocket.

Appendix F presents the Synchro queuing worksheets for the study intersections.

9.2 Year 2045 Traffic Conditions

Table 9-2 presents the AM, PM and Saturday Midday peak hour queueing analyses results for the two (2) study intersections for Year 2045. The first column (1) of *Table 9-2* presents the resultant queues for Year 2045 buildout traffic conditions. The second column (2) presents the resultant queues for Year 2045 buildout traffic conditions with the addition of Project traffic. The third column (3) presents the resultant queues with the inclusion of recommended traffic improvements, where needed.

9.2.1 *Year 2045 Buildout Traffic Conditions*

Review of column (1) of *Table 9-2* indicates that one (1) of the two (2) study intersections have queues which exceed the provided storage capacity for one or more intersection approach under Year 2045 buildout traffic conditions. The remaining study intersection has queues that are adequately accommodated by the provided storage space. The intersections/approaches with storage deficiencies include the following:

- Intersection No. 14: State College Boulevard at Imperial Highway
  - Southbound Left-Turn: PM Peak Hour and Saturday Midday Peak Hour
  - Westbound Right-Turn: Saturday Midday Peak Hour

9.2.2 *Year 2045 Buildout Plus Project Traffic Conditions*

Review of column (2) of *Table 9-2* indicates that one (1) of the two (2) study intersections have queues which exceed the provided storage capacity for one or more intersection approach with the addition of proposed Project traffic to Year 2045 buildout traffic conditions. The remaining study intersection has queues that are adequately accommodated by the provided storage space. The intersections/approaches with storage deficiencies include the following:

- Intersection No. 14: State College Boulevard at Imperial Highway
  - Southbound Left-Turn: PM Peak Hour and Saturday Midday Peak Hour
  - Westbound Right-Turn: Saturday Midday Peak Hour

Review of column (3) of *Table 9-1* indicates that the southbound left-turn and westbound right turn at State College Boulevard at Imperial Highway (Intersection No. 14) exceeds the storage capacity and the added project trips would increase these movements by more than one vehicle. However, with the recommended improvements this intersection would operate better than pre-Project conditions for the southbound left-turn. It should be noted that the westbound right-turn has constraints that does not allow for any feasible improvements to be implemented. Therefore, the westbound right-turn pocket will continue to exceed the pocket.

Appendix F presents the Synchro queuing worksheets for the study intersections.

TABLE 9-1
YEAR 2026 PEAK HOUR INTERSECTION QUEUING ANALYSIS

Study Intersection	Estimated Storage Provided (feet)	(1) Year 2026 Traffic Conditions						(2) Year 2026 Plus Project Traffic Conditions						(3) Year 2026 Plus Project with Improvements Traffic Conditions					
		AM Peak Hour		PM Peak Hour		Sat. MD Peak Hour		AM Peak Hour		PM Peak Hour		Sat. MD Peak Hour		AM Peak Hour		PM Peak Hour		Sat. MD Peak Hour	
		Max. Queue/ Min. Storage Req.[51]	Adequate Storage (Yes / No)	Max. Queue/ Min. Storage Req.[51]	Adequate Storage (Yes / No)	Max. Queue/ Min. Storage Req.[51]	Adequate Storage (Yes / No)	Max. Queue/ Min. Storage Req.[51]	Adequate Storage (Yes / No)	Max. Queue/ Min. Storage Req.[51]	Adequate Storage (Yes / No)	Max. Queue/ Min. Storage Req.[51]	Adequate Storage (Yes / No)	Max. Queue/ Min. Storage Req.[51]	Adequate Storage (Yes / No)	Max. Queue/ Min. Storage Req.[51]	Adequate Storage (Yes / No)	Max. Queue/ Min. Storage Req.[51]	Adequate Storage (Yes / No)
13. Randolph Avenue at Imperial Highway																			
Southbound Left-Turn[52]	160	57	Yes	152	Yes	228	Yes[53]	81	Yes	167	Yes[53]	245	Yes[53]	--	--	--	--	--	--
Eastbound Left-Turn[52]	165	44	Yes	173	Yes[53]	219	Yes[53]	74	Yes	240	Yes Yes[53]	243	Yes[53]	--	--	--	--	--	--
Westbound Right-Turn	310	25	Yes	25	Yes	25	Yes	25	Yes	27	Yes	25	Yes	--	--	--	--	--	--
14. State College Boulevard at Imperial Highway																			
Southbound Left-Turn[52]	260 / 443[54]	68	Yes	**489**	**No**	**762**	**No**	84	Yes	**513**	**No**	**852**	**No**	83[55]	Yes	396[55]	Yes	**746**[55]	**No**
Southbound Right-Turn[56]	275	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	25	Yes	25	Yes	77	Yes
Eastbound Left-Turn[52]	180	25	Yes	65	Yes	84	Yes	25	Yes	66	Yes	84	Yes	25	Yes	66	Yes	84	Yes
Westbound Right-Turn	250	25	Yes	194	Yes	**1,503**	**No**	35	Yes	312	Yes[53]	**1,557**	**No**	35	Yes	312	Yes[53]	**1,557**	**No**

51 Maximum queue in feet (ft) is calculated by multiplying the *Average Queue* by a factor of 1.5.

52 The turn-lane consists of dual lanes.

53 The remaining queue can be accommodated within the transition area of the turn-lane.

54 Existing storage is 260 feet per lane. Recommended improvements at the study intersection include modifying the existing median and restriping the no. 2 southbound left-turn lane into a trap left-turn lane. As a result, with improvements, the first lane will consist of approximately 260 feet and the second lane will consist of approximately 625 feet of storage. The storage reported is the average of both lanes.

55 Please note that the recommended improvement at this intersection takes into consideration the on-ramp modifications and restriping the no. 3 eastbound through lane along Imperial Highway at the SR-57 SB On-Ramp to a shared through/right-turn lane. In the event that Caltrans does not proceed with this improvement, the southbound left-turn at the intersection would result in the following queues: *AM Peak Hour = 84 feet; PM Peak Hour = 513 feet, Sat. Midday Peak Hour = 852 feet*. The queues for the remaining turn pockets would remain the same as reported in column (3).

56 An exclusive southbound right-turn lane is a recommended improvement. The provided storage is approximated.

TABLE 9-2
YEAR 2045 PEAK HOUR INTERSECTION QUEUING ANALYSIS

Study Intersection	Estimated Storage Provided (feet)	(1) Year 2045 Traffic Conditions						(2) Year 2045 Plus Project Traffic Conditions						(3) Year 2045 Plus Project with Improvements Traffic Conditions					
		AM Peak Hour		PM Peak Hour		Sat. MD Peak Hour		AM Peak Hour		PM Peak Hour		Sat. MD Peak Hour		AM Peak Hour		PM Peak Hour		Sat. MD Peak Hour	
		Max. Queue/ Min. Storage Req.[57]	Adequate Storage (Yes / No)	Max. Queue/ Min. Storage Req.[57]	Adequate Storage (Yes / No)	Max. Queue/ Min. Storage Req.[57]	Adequate Storage (Yes / No)	Max. Queue/ Min. Storage Req.[57]	Adequate Storage (Yes / No)	Max. Queue/ Min. Storage Req.[57]	Adequate Storage (Yes / No)	Max. Queue/ Min. Storage Req.[57]	Adequate Storage (Yes / No)	Max. Queue/ Min. Storage Req.[57]	Adequate Storage (Yes / No)	Max. Queue/ Min. Storage Req.[57]	Adequate Storage (Yes / No)	Max. Queue/ Min. Storage Req.[57]	Adequate Storage (Yes / No)
13. Randolph Avenue at Imperial Highway																			
Southbound Left-Turn[58]	160	48	Yes	135	Yes	213	Yes[59]	59	Yes	146	Yes	228	Yes[59]	--	--	--	--	--	--
Eastbound Left-Turn[58]	165	62	Yes	173	Yes[59]	216	Yes[59]	89	Yes	236	Yes[59]	236	Yes[59]	--	--	--	--	--	--
Westbound Right-Turn	310	90	Yes	25	Yes	25	Yes	25	Yes	27	Yes	25	Yes	--	--	--	--	--	--
14. State College Boulevard at Imperial Highway																			
Southbound Left-Turn[58]	260 / 443[60]	80	Yes	**449**	**No**	**638**	**No**	107	Yes	**470**	**No**	**711**	**No**	93[61]	Yes	354[61]	Yes	**608**[61]	**No**
Southbound Right-Turn[62]	275	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	25	Yes	25	Yes	51	Yes
Eastbound Left-Turn[58]	180	25	Yes	66	Yes	81	Yes	25	Yes	66	Yes	83	Yes	25	Yes	66	Yes	83	Yes
Westbound Right-Turn	250	25	Yes	230	Yes	**1,778**	**No**	33	Yes	326	Yes[59]	**1,824**	**No**	33	Yes	326	Yes[59]	**1,824**	**No**

57 Maximum queue in feet (ft) is calculated by multiplying the *Average Queue* by a factor of 1.5.

58 The turn-lane consists of dual lanes.

59 The remaining queue can be accommodated within the transition area of the turn-lane.

60 Existing storage is 260 feet per lane. Recommended improvements at the study intersection include modifying the existing median and restriping the no. 2 southbound left-turn lane into a trap left-turn lane. As a result, with improvements, the first lane will consist of approximately 260 feet and the second lane will consist of approximately 625 feet of storage. The storage reported is the average of both lanes.

61 Please note that the recommended improvement at this intersection takes into consideration the on-ramp modifications and restriping the no. 3 eastbound through lane along Imperial Highway at the SR-57 SB On-Ramp to a shared through/right-turn lane. In the event that Caltrans does not proceed with this modification, the southbound left-turn at the intersection would result in the following queues: *AM Peak Hour = 107 feet; PM Peak Hour = 470 feet, Sat. Midday Peak Hour = 711 feet*. The queues for the remaining turn pockets would remain the same as reported in column (3).

62 An exclusive southbound right-turn lane is a recommended improvement. The provided storage is approximated.

10.0 SITE ACCESS AND INTERNAL CIRCULATION EVALUATION

10.1 Site Access

The Brea Mall can be accessed from three of the four surrounding streets bordering the subject property, State College Boulevard, Randolph Avenue, and Birch Street; no vehicular access is provided from Imperial Highway. Vehicular access from Randolph Avenue is currently provided by two (2) signalized intersections, whereas one (1) signalized access is provided along Birch Street. From State College Boulevard, three (3) signalized intersections provide access to the Brea Mall. No change in access to the Brea Mall is proposed as a part of the Project. Since the Project is focused to the southwest portion of the Brea Mall property the southernmost driveways along Randolph Avenue and State College Boulevard are anticipated to be the focus of Project related trips.

As shown in *Tables 8-1* through *8-4,* the intersections of Randolph Avenue at Madison Way, Randolph Avenue at Brea Mall, and Brea Mall South at State College Boulevard are forecast to operate at LOS D or better during the Weekday AM, Weekday PM, and Weekend (Saturday) Midday peak hours in all traffic conditions.

10.2 Focused Project Driveway Synchro Queuing Assessment

Per the direction of City on Brea and Caltrans a focused Synchro assessment has been completed at the two Project Driveways located closest to Imperial Highway along State College Boulevard and Randolph Avenue to assess if the stacking requirements with the proposed Project are adequate. It is our understanding the City of Brea and Caltrans would like to ensure that Randolph Avenue does not queue back from the Project Driveway onto Imperial Highway. As it relates to State College it is our understanding the City of Brea and Caltrans are concerned with how the southbound dual lefts will interact with the freeway on-ramp.

The queuing evaluation was conducted for Year 2026 Plus Project Traffic Conditions and Year 2045 Plus Project Traffic Conditions. The Average Queue methodology was used which calculates the average queue value in terms of number of vehicles per lane. At signalized intersections, the storage length for left-turn and right-turn lanes can vary based on vehicle demand and the green-time provided by the traffic signal. For the purposes of this traffic analysis, the minimum storage requirement for left-turn lanes and right-turn lanes was calculated by multiplying the anticipated average queue length computed by the Synchro modeling program by 150 percent.

Tables 10-1 and ***10-2*** identifies the minimum required stacking/storage lengths for the key study locations for Year 2026 Plus Project Traffic conditions. Review of *Tables 10-1* and *10-2* shows that the southbound left-turn movement at State College Boulevard at Imperial Highway has queues that exceed its capacity. The southbound left-turn lanes are underutilized due to the presence of a single SR-57 southbound on-ramp from Imperial Highway to the east of the intersection. In addition to the recommended improvements as detailed in *Section 11.0,* the addition of a second SR-57 southbound on-ramp from Imperial Highway would help distribute southbound left-turn traffic more equally between the lanes. Although the southbound left-turn movement would still have queues that exceed its capacity, the queue would be improved by these recommendations. It should be noted that the

queue related to the inbound movement at the Project driveways along State College Boulevard and Randolph Avenue are not anticipated to queue back to Imperial Highway. In addition, the outbound queues at the Project driveways along State College Boulevard and Randolph Avenue are forecast to queue through the internal intersection. However, since these internal intersections are designed as all-way stops it allows for adequate traffic control to minimize conflicts and congestion.

Appendix F presents the Synchro queuing worksheets for the Project driveways.

TABLE 10-1
YEAR 2026 DRIVEWAY QUEUING ANALYSIS

Study Intersection	Estimated Storage Provided (feet)	(1) Year 2026 Traffic Conditions						(2) Year 2026 Plus Project Traffic Conditions						(3) Year 2026 Plus Project with Improvements Traffic Conditions					
		AM Peak Hour		PM Peak Hour		Sat. MD Peak Hour		AM Peak Hour		PM Peak Hour		Sat. MD Peak Hour		AM Peak Hour		PM Peak Hour		Sat. MD Peak Hour	
		Max. Queue/ Min. Storage Req.[63]	Adequate Storage (Yes / No)	Max. Queue/ Min. Storage Req.[63]	Adequate Storage (Yes / No)	Max. Queue/ Min. Storage Req.[63]	Adequate Storage (Yes / No)	Max. Queue/ Min. Storage Req.[63]	Adequate Storage (Yes / No)	Max. Queue/ Min. Storage Req.[63]	Adequate Storage (Yes / No)	Max. Queue/ Min. Storage Req.[63]	Adequate Storage (Yes / No)	Max. Queue/ Min. Storage Req.[63]	Adequate Storage (Yes / No)	Max. Queue/ Min. Storage Req.[63]	Adequate Storage (Yes / No)	Max. Queue/ Min. Storage Req.[63]	Adequate Storage (Yes / No)
8. Randolph Avenue at Brea Mall																			
Northbound Through/Right-Turn	345	25	Yes	25	Yes	183	Yes	25	Yes	36	Yes	207	Yes	--	--	--	--	--	--
Southbound Left-Turn	115	25	Yes	25	Yes	25	Yes	25	Yes	25	Yes	29	Yes	--	--	--	--	--	--
Westbound Left-Turn	110	32	Yes	224	Yes[64]	224	Yes[64]	137	Yes[64]	257	Yes[64]	281	Yes[64]	--	--	--	--	--	--
Westbound Left/Through/Right	110	25	Yes	198	Yes[64]	195	Yes[64]	25	Yes	230	Yes[64]	249	Yes[64]	--	--	--	--	--	--
9. Brea Mall South at State College Boulevard																			
Southbound Left/Through	120	25	Yes	41	Yes	54	Yes	25	Yes	48	Yes	69	Yes	--	--	--	--	--	--
Southbound Through	120	25	Yes	41	Yes	54	Yes	25	Yes	48	Yes	69	Yes	--	--	--	--	--	--
Southbound Right-Turn	120	25	Yes	117	Yes	303	Yes[64]	25	Yes	150	Yes[64]	528	Yes[64]	--	--	--	--	--	--
Eastbound Left-Turn[65]	220	56	Yes	345	Yes[66]	450	Yes[66]	104	Yes	426	Yes[66]	488	Yes[66]	--	--	--	--	--	--
Eastbound Through	575	65	Yes	354	Yes	25	Yes	77	Yes	342	Yes	189	Yes	--	--	--	--	--	--
Westbound Through/Right	1,115	147	Yes	306	Yes	360	Yes	153	Yes	321	Yes	365	Yes	--	--	--	--	--	--
14. State College Boulevard at Imperial Highway																			
Southbound Left-Turn[65]	260 / 443[67]	68	Yes	**489**	**No**	**762**	**No**	84	Yes	**513**	**No**	**852**	**No**	83[68]	Yes	396[68]	Yes	**746**[68]	**No**

63 Maximum queue in feet (ft) is calculated by multiplying the *Average Queue* by a factor of 1.5.

64 The remaining queue can be accommodated within the project site.

65 The turn-lane consists of dual lanes.

66 The remaining queue can be accommodated within the transition area of the turn-lane.

67 Existing storage is 260 feet per lane. Recommended improvements at the study intersection include modifying the existing median and restriping the no. 2 southbound left-turn lane into a trap left-turn lane. As a result, with improvements, the first lane will consist of approximately 260 feet and the second lane will consist of approximately 625 feet of storage. The storage reported is the average of both lanes.

68 Please note that the recommended improvement at this intersection takes into consideration the on-ramp modifications and restriping the no. 3 eastbound through lane along Imperial Highway at the SR-57 SB On-Ramp to a shared through/right-turn lane. In the event that Caltrans does not proceed with the restriping, the southbound left-turn at the intersection would result in the following queues: *AM Peak Hour = 84 feet; PM Peak Hour = 513 feet, Sat. Midday Peak Hour = 852 feet*. The queues for the remaining turn pockets would remain the same as reported in column (3).

TABLE 10-2
YEAR 2045 DRIVEWAY QUEUING ANALYSIS

Study Intersection	Estimated Storage Provided (feet)	(1) Year 2045 Traffic Conditions						(2) Year 2045 Plus Project Traffic Conditions						(3) Year 2045 Plus Project with Improvements Traffic Conditions					
		AM Peak Hour		PM Peak Hour		Sat. MD Peak Hour		AM Peak Hour		PM Peak Hour		Sat. MD Peak Hour		AM Peak Hour		PM Peak Hour		Sat. MD Peak Hour	
		Max. Queue/ Min. Storage Req.[69]	Adequate Storage (Yes / No)	Max. Queue/ Min. Storage Req.[69]	Adequate Storage (Yes / No)	Max. Queue/ Min. Storage Req.[69]	Adequate Storage (Yes / No)	Max. Queue/ Min. Storage Req.[69]	Adequate Storage (Yes / No)	Max. Queue/ Min. Storage Req.[69]	Adequate Storage (Yes / No)	Max. Queue/ Min. Storage Req.[69]	Adequate Storage (Yes / No)	Max. Queue/ Min. Storage Req.[69]	Adequate Storage (Yes / No)	Max. Queue/ Min. Storage Req.[69]	Adequate Storage (Yes / No)	Max. Queue/ Min. Storage Req.[69]	Adequate Storage (Yes / No)
8. Randolph Avenue at Brea Mall																			
Northbound Through/Right-Turn	345	25	Yes	25	Yes	25	Yes	25	Yes	35	Yes	281	Yes	--	--	--	--	--	--
Southbound Left-Turn	115	25	Yes	25	Yes	25	Yes	25	Yes	25	Yes	25	Yes	--	--	--	--	--	--
Westbound Left-Turn	110	25	Yes	**203**	Yes[70]	**200**	Yes[70]	83	Yes	**231**	Yes[70]	**248**	Yes[70]	--	--	--	--	--	--
Westbound Left/Through/Right	110	25	Yes	**174**	Yes[70]	**173**	Yes[70]	25	Yes	**203**	Yes[70]	**218**	Yes[70]	--	--	--	--	--	--
9. Brea Mall South at State College Boulevard																			
Southbound Left/Through	120	25	Yes	36	Yes	51	Yes	25	Yes	44	Yes	65	Yes	--	--	--	--	--	--
Southbound Through	120	25	Yes	36	Yes	51	Yes	25	Yes	44	Yes	65	Yes	--	--	--	--	--	--
Southbound Right-Turn	120	25	Yes	65	Yes	**186**	Yes[70]	25	Yes	86	Yes	**378**	Yes[70]	--	--	--	--	--	--
Eastbound Left-Turn[71]	220	53	Yes	314	Yes[72]	438	Yes[72]	87	Yes	383	Yes[72]	476	Yes[72]	--	--	--	--	--	--
Eastbound Through	575	158	Yes	315	Yes	236	Yes	53	Yes	308	Yes	233	Yes	--	--	--	--	--	--
Westbound Through/Right	1,115	210	Yes	293	Yes	333	Yes	218	Yes	306	Yes	336	Yes	--	--	--	--	--	--
14. State College Boulevard at Imperial Highway																			
Southbound Left-Turn[71]	260 / 443[73]	80	Yes	**449**	**No**	**638**	**No**	107	Yes	**470**	**No**	**711**	**No**	93[74]	Yes	354[74]	Yes	**608**[74]	**No**

[69] Maximum queue in feet (ft) is calculated by multiplying the *Average Queue* by a factor of 1.5.

[70] The remaining queue can be accommodated within the project site.

[71] The turn-lane consists of dual lanes.

[72] The remaining queue can be accommodated within the transition area of the turn-lane.

[73] Existing storage is 260 feet per lane. Recommended improvements at the study intersection include modifying the existing median and restriping the no. 2 southbound left-turn lane into a trap left-turn lane. As a result, with improvements, the first lane will consist of approximately 260 feet and the second lane will consist of approximately 625 feet of storage. The storage reported is the average of both lanes.

[74] Please note that the recommended improvement at this intersection takes into consideration the on-ramp modifications and restriping the no. 3 eastbound through lane along Imperial Highway at the SR-57 SB On-Ramp to a shared through/right-turn lane. In the event that Caltrans does not proceed with this improvement, the southbound left-turn at the intersection would result in the following queues: *AM Peak Hour = 107 feet; PM Peak Hour = 470 feet, Sat. Midday Peak Hour = 711 feet*. The queues for the remaining turn pockets would remain the same as reported in column (3).

11.0 AREA-WIDE TRAFFIC IMPROVEMENTS

For those intersections where projected traffic volumes are expected to exceed the LOS criteria thresholds, this report recommends traffic improvements that change the intersection geometry to increase capacity. These capacity improvements involve roadway widening and/or re-striping to reconfigure roadways to specific approaches of a study intersection. The identified improvements are expected to improve levels of service at the location which exceed the LOS criteria thresholds.

Figures 11-1 and ***11-2*** present the recommended improvements and intersection controls at the key study intersections for the Year 2026 and Year 2045 traffic conditions per ICU analysis and HCM analysis, respectively. These are discussed in more detail in the sections below.

Table 11-1 identifies the incremental intersection improvements needed by the relevant study years to maintain, where possible, acceptable service levels based on the LOS standards defined in this report, as detailed in the sections below.

11.1 Planned Improvements

The following improvements listed below are part of the SR-57 Lambert Interchange improvement project, now under construction, that have been included in the Year 2026 and Year 2045 background traffic conditions:

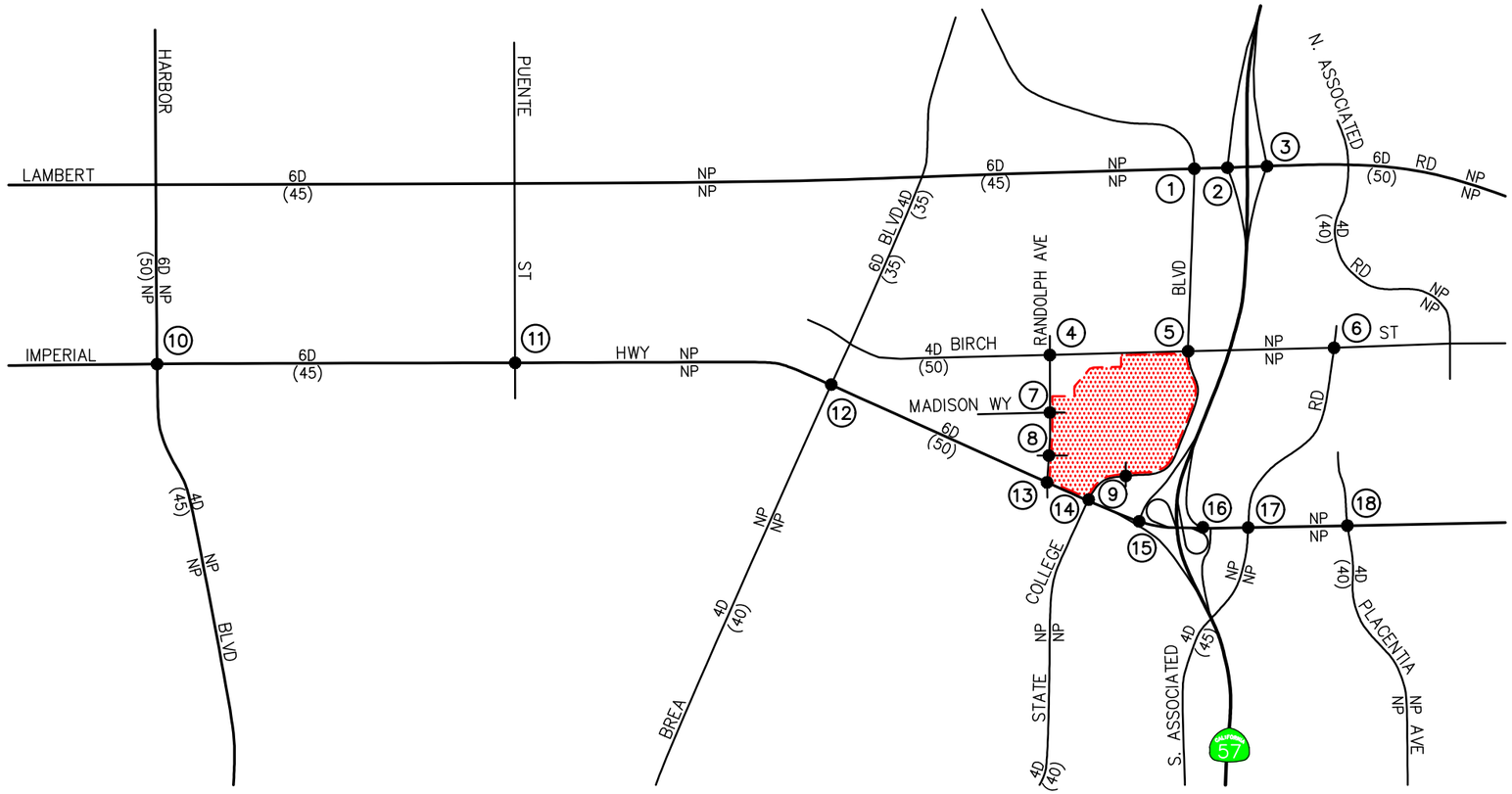
- **No. 2 – SR-57 SB Ramps at Lambert Road:** Widen the off-ramp to provide a second exclusive southbound left-turn lane. Restripe the shared southbound left-turn/through/right-turn lane to a second exclusive right-turn lane. Widen to provide a second exclusive eastbound right-turn lane. Modify the existing traffic signal.

- **No. 3 – SR-57 NB Ramps at Lambert Road:** Construct a loop on-ramp on the south leg. Remove dual eastbound exclusive left-turn lanes. Widen and restripe to provide a shared eastbound through/right-turn lane and an exclusive eastbound right-turn lane. Reconstruct the existing on-ramp for a free westbound right-turn lane. Modify the existing traffic signal.

11.2 Year 2026 Plus Project Traffic Conditions Recommended Improvements

11.2.1 *Year 2026 Plus Project – ICU*

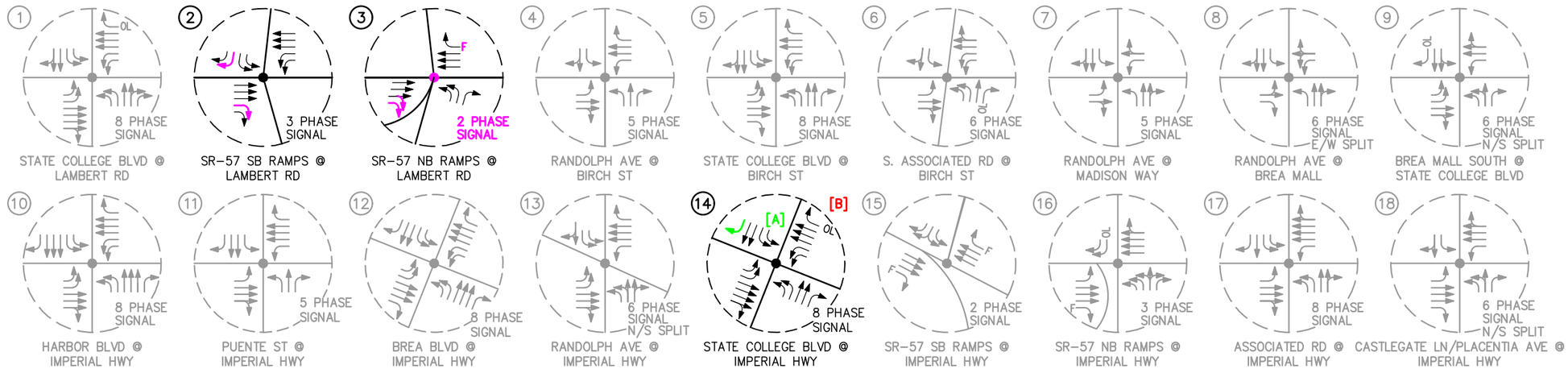
The results of the intersection capacity analyses presented previously in *Table 8-1* show that one (1) of the eighteen (18) study intersections require Project-related improvements under Year 2026 Plus Project traffic conditions based on ICU analysis. As such, the following intersection improvements are recommended. Per City requirements, the Project may be expected to pay a fair-share/local fee to cover the Project's fair share of the full construction costs needed to implement these improvements. It should be noted that although the intersection of SR-57 Southbound Ramps at Imperial Highway operates at acceptable service levels the recommended improvements will help improve congestion related to weaving and improve service levels at State College Boulevard at Imperial Highway as well.



NOTES:

[A] MODIFY THE MEDIAN AND RESTRIPE THE NO. 2 SB LEFT TURN INTO A TRAP LEFT TURN LANE.

[B] IN CONJUNCTION WITH THE LENGTHENING OF THE SOUTHBOUND LEFT-TURN IT IS RECOMMENDED THAT THE NO. 3 EASTBOUND THROUGH LANE ALONG IMPERIAL AT THE SR-57 SOUTHBOUND ON-RAMP BE CONVERTED TO A SHARED THROUGH/RIGHT-TURN LANE.



KEY

- = APPROACH LANE ASSIGNMENT
- = RECOMMENDED IMPROVEMENTS
- = YEAR 2026 PLANNED IMPROVEMENTS
- ● = TRAFFIC SIGNAL
- = STOP SIGN
- F = FREE-RIGHT
- OL = OVERLAP
- = PROJECT SITE

LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

FIGURE 11-1

PLANNED AND RECOMMENDED IMPROVEMENTS – ICU

BREA MALL EXPANSION & IMPORVEMENTS, BREA

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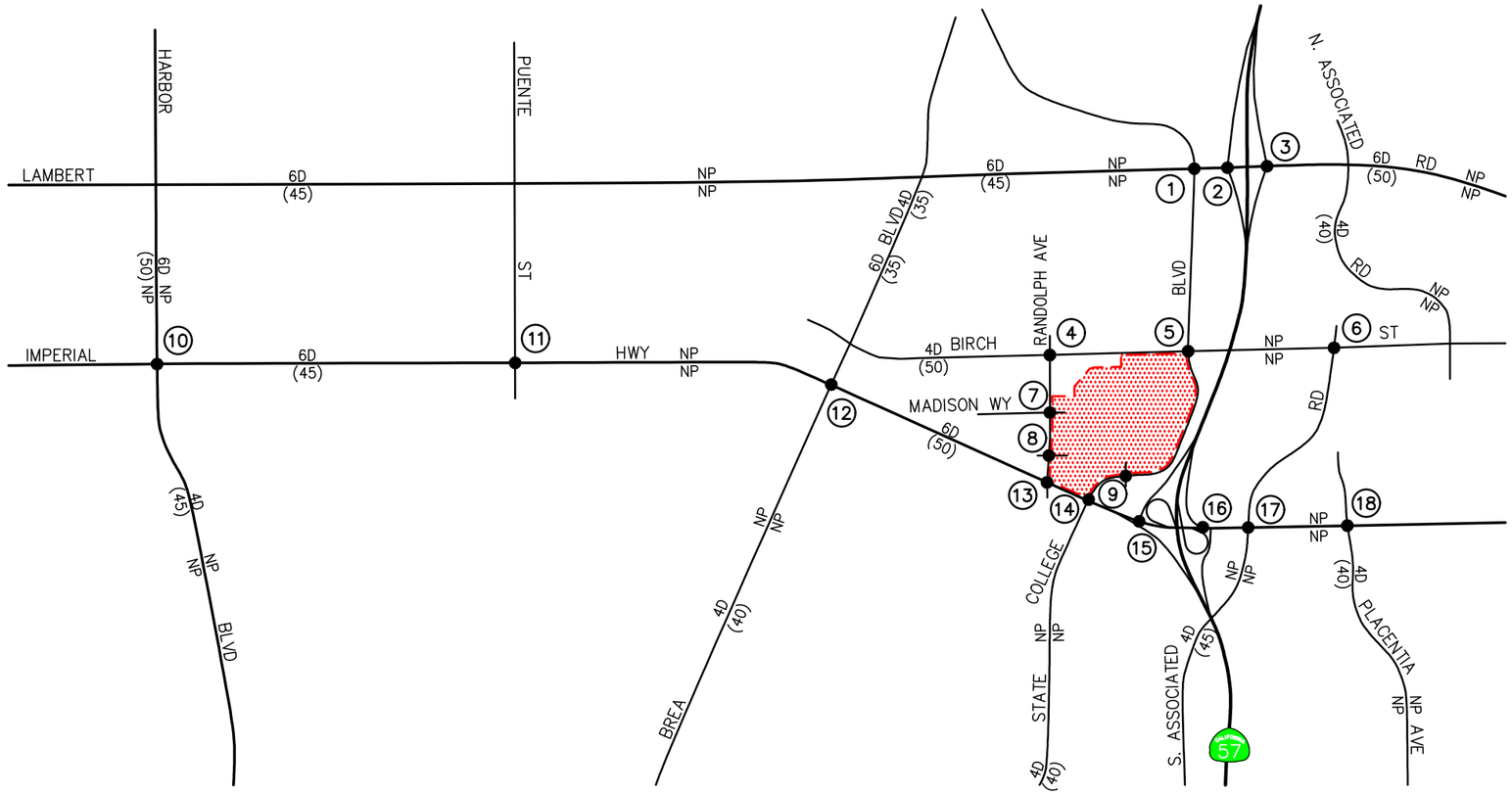
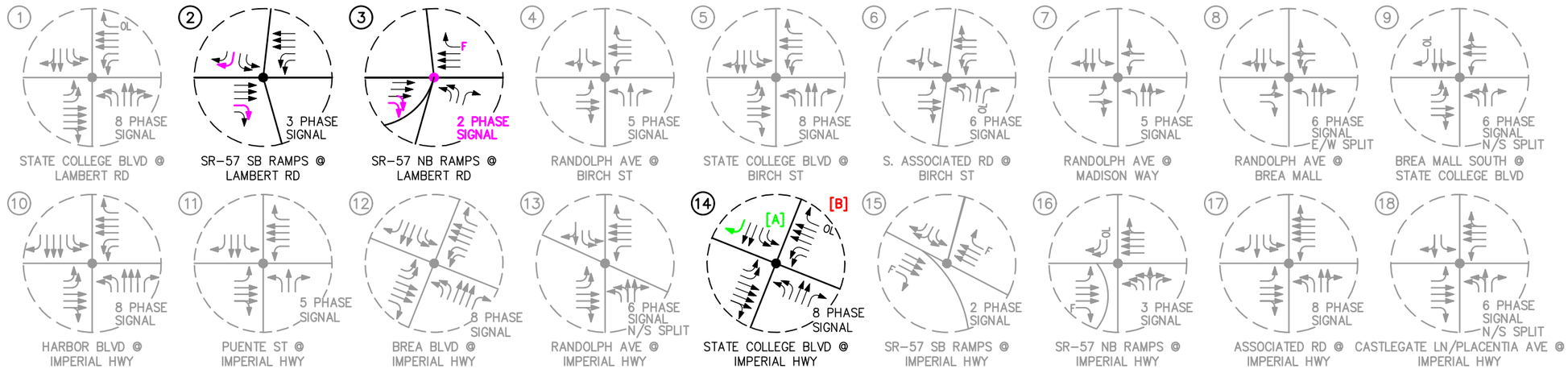


NOTES:

[A] MODIFY THE MEDIAN AND RESTRIPE THE NO. 2 SB LEFT TURN INTO A TRAP LEFT TURN LANE.

[B] IN CONJUNCTION WITH THE LENGTHENING OF THE SOUTHBOUND LEFT-TURN IT IS RECOMMENDED THAT THE NO. 3 EASTBOUND THROUGH LANE ALONG IMPERIAL AT THE SR-57 SOUTHBOUND ON-RAMP BE CONVERTED TO A SHARED THROUGH/RIGHT-TURN LANE.



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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

= APPROACH LANE ASSIGNMENT
= RECOMMENDED IMPROVEMENTS
= YEAR 2026 PLANNED IMPROVEMENTS
= TRAFFIC SIGNAL
= STOP SIGN
F = FREE-RIGHT
OL = OVERLAP
= PROJECT SITE

FIGURE 11-2

PLANNED AND RECOMMENDED IMPROVEMENTS - HCM

BREA MALL EXPANSION & IMPORVEMENTS, BREA

- **No. 14 – State College Boulevard at Imperial Highway:** Conduct median modifications and restripe the southbound approach to provide an exclusive southbound right-turn lane. Modify the median and restripe the No. 2 SB left-turn lane into a trap left turn lane. Modify the existing traffic signal, as necessary.

- **No. 15 – SR-57 Southbound Ramps at Imperial Highway:** Restripe the No. 3 eastbound through lane along Imperial at the SR-57 southbound on-ramp to be converted to a shared through/right-turn lane. Modify the on-ramp to allow for two receiving lanes. Modify the existing traffic signal, as necessary.

11.2.2 *Year 2026 Plus Project – HCM*

The results of the intersection capacity analyses presented previously in *Table 8-2* show that one (1) of the eighteen (18) study intersections require Project-related improvements under Year 2026 Plus Project traffic conditions based on HCM analysis. As such, the following intersection improvements are recommended. Per City requirements, the Project may be expected to pay a fair-share/local fee to cover the Project's fair share of the full construction costs needed to implement these improvements. It should be noted that although the intersection of SR-57 Southbound Ramps at Imperial Highway operates at acceptable service levels the recommended improvements will help improve congestion related to weaving and improve service levels at State College Boulevard at Imperial Highway as well.

- **No. 14 – State College Boulevard at Imperial Highway:** Conduct median modifications and restripe the southbound approach to provide an exclusive southbound right-turn lane. Modify the median and restripe the No. 2 SB left-turn lane into a trap left turn lane. Modify the existing traffic signal, as necessary.

- **No. 15 – SR-57 Southbound Ramps at Imperial Highway:** Restripe the No. 3 eastbound through lane along Imperial at the SR-57 southbound on-ramp to be converted to a shared through/right-turn lane. Modify the on-ramp to allow for two receiving lanes. Modify the existing traffic signal, as necessary.

11.3 Year 2045 Plus Project Traffic Conditions Recommended Improvements

11.3.1 *Year 2045 Plus Project – ICU*

The results of the intersection capacity analyses presented previously in *Table 8-3* show that one (1) of the eighteen (18) study intersections require Project-related improvements under Year 2045 Plus Project traffic conditions based on ICU analysis. As such, the following intersection improvements are recommended. Per City requirements, the Project may be expected to pay a fair-share/local fee to cover the Project's fair share of the full construction costs needed to implement these improvements. It should be noted that although the intersection of SR-57 Southbound Ramps at Imperial Highway operates at acceptable service levels the recommended improvements will help improve congestion related to weaving and improve service levels at State College Boulevard at Imperial Highway as well.

- **No. 14 – State College Boulevard at Imperial Highway:** *Same as those identified in Sections 11.2.1.* Conduct median modifications and restripe the southbound approach to provide an exclusive southbound right-turn lane. Modify the median and restripe the No. 2 SB left-turn lane into a trap left turn lane. Modify the existing traffic signal, as necessary.

- **No. 15 – SR-57 Southbound Ramps at Imperial Highway:** Restripe the No. 3 eastbound through lane along Imperial at the SR-57 southbound on-ramp to be converted to a shared through/right-turn lane. Modify the on-ramp to allow for two receiving lanes. Modify the existing traffic signal, as necessary.

11.3.2 *Year 2045 Plus Project – HCM*

The results of the intersection capacity analyses presented previously in *Table 8-4* show that one (1) of the eighteen (18) study intersections require Project-related improvements under Year 2045 Plus Project traffic conditions based on HCM analysis. As such, the following intersection improvements are recommended. Per City requirements, the Project may be expected to pay a fair-share/local fee to cover the Project's fair share of the full construction costs needed to implement these improvements. It should be noted that although the intersection of SR-57 Southbound Ramps at Imperial Highway operates at acceptable service levels the recommended improvements will help improve congestion related to weaving and improve service levels at State College Boulevard at Imperial Highway as well.

- **No. 14 – State College Boulevard at Imperial Highway:** *Same as those identified in Section 11.2.2.* Conduct median modifications and restripe the southbound approach to provide an exclusive southbound right-turn lane. Modify the median and restripe the No. 2 SB left-turn lane into a trap left turn lane. Modify the existing traffic signal, as necessary.

- **No. 15 – SR-57 Southbound Ramps at Imperial Highway:** Restripe the No. 3 eastbound through lane along Imperial at the SR-57 southbound on-ramp to be converted to a shared through/right-turn lane. Modify the on-ramp to allow for two receiving lanes, as necessary.

TABLE 11-1

SUMMARY OF PROJECT RECOMMENDED IMPROVEMENTS BY SCENARIO

Study Intersections	Jurisdiction (City Location)	Improvement Description	Improvements by Scenario			
			Year 2026 Plus Project		Year 2045 Plus Project	
			ICU	HCM	ICU	HCM
14. State College Boulevard at Imperial Highway	Caltrans (Brea)	▪ Restripe to provide exclusive SB right-turn lane	✓	✓	X	X
		▪ Modify the median and restripe the No. 2 SB left-turn lane into a trap left turn lane[75]	✓	✓	X	X
		▪ Modify existing traffic signal	✓	✓	X	X
15. SR-57 SB Ramps at Imperial Highway	Caltrans (Brea)	▪ Restripe the No.3 eastbound through lane into a shared through/right-turn lane	✓	✓	X	X
		▪ Modify the on-ramp to allow for two receiving lanes	✓	✓	X	X

Notes:

✓ = Denotes that the improvement is implemented in the scenario.

X = Denotes that the improvement carries over from the previous scenario and is assumed to be already implemented.

[75] In conjunction with the lengthening of the southbound left-turn lane it is recommended that the no. 3 eastbound through lane along Imperial Highway at the SR-57 southbound on-ramp be converted to a shared through/right-turn lane.

11.4 Project-Related Fair-Share Contribution

The transportation improvements associated with the development of the Project were determined based on the future conditions analysis with and without the proposed Project. The key study locations forecast to operate at adverse levels of service are discussed below. As such, the proposed Project's "fair share" of the recommended improvements has been calculated for the key study intersections that are forecast to operate at adverse levels of service in the Year 2026 Plus Project, and Year 2045 Plus Project traffic conditions. It should be noted that while fair share costs have been calculated Caltrans has no mechanism by which the Project can contribute fair share fees to offset the Project's degradation.

As such the Project may be expected to construct improvements and/or can be expected to pay a proportional "fair-share" of the improvement costs of the impacted intersection to mitigate the Project's traffic degradation.

11.4.1 *Year 2026 Plus Project Traffic Conditions*

Table 11-2 presents Project's fair-share contribution to construct the recommended improvements at two (2) of the study intersections projected to operate at an unacceptable LOS and/or inadequate queuing in the Year 2026 Plus Project traffic conditions. It should be noted that the intersection improvements identified for SR-57 Southbound Ramps at Imperial Highway are part of the City's Capital Improvement Program (CIP), therefore, the Projects contribution towards the City of Brea Traffic Fees may satisfy a portion of their fair share obligations at this location. It is our understanding that detailed cost estimates will be provided to the City to help determine the exact fair share amount.

11.4.2 *Year 2045 Plus Project Traffic Conditions*

Table 11-3 presents Project's fair-share contribution to construct the recommended improvements at two (2) of the study intersections projected to operate at an unacceptable LOS and/or inadequate queuing in the Year 2045 Plus Project traffic conditions.

It should be noted that the intersection of State College Boulevard at Imperial Highway is shown to have 0.00% fair share since the recommended improvements are assumed to be implemented in Year 2026 Plus Project traffic conditions. It should be noted that the intersection improvements identified for SR-57 Southbound Ramps at Imperial Highway are part of the City's CIP, therefore, the Projects contribution towards the City of Brea Traffic Fees may satisfy a portion of their fair share obligations at this location. It is our understanding that detailed cost estimates will be provided to the City to help determine the exact fair share amount.

TABLE 11-2
YEAR 2026 PROJECT FAIR-SHARE CONTRIBUTION

Study Intersection	City/ Jurisdiction	Time Period	(1) Existing Traffic	(2) Project Traffic	(3) Year 2026 Plus Project Traffic	(4) Project Fair-Share Percent[76]
14. State College Boulevard at Imperial Highway	Brea/ Caltrans	AM	--	--	--	--
		PM	6,664	174	7,556	**19.51%**
		Sat MD	7,557	159	8,620	14.96%
15. SR-57 SB Ramps at Imperial Highway	Brea/ Caltrans	AM	--	--	--	--
		PM	6,268	129	7,010	**17.39%**
		Sat MD	6,979	117	7,788	14.46%

[76] Project fair-share percentage Column (4) = [Column (2)] / [Column (3) – Column (1)].

TABLE 11-3
YEAR 2045 PROJECT FAIR-SHARE CONTRIBUTION

Study Intersection	City/ Jurisdiction	Time Period	(1) Existing Traffic	(2) Project Traffic	(3) Year 2045 Plus Project Traffic	(4) Project Fair-Share Percent[77]
14. State College Boulevard at Imperial Highway	Brea/ Caltrans	AM	--	--	--	--
		PM	--	--	--	--
		Sat MD	7,557	159	9,373	0.00%[78]
15. SR-57 SB Ramps at Imperial Highway	Brea/ Caltrans	AM	--	--	--	--
		PM	--	--	--	--
		Sat MD	8,193	117	8,333	0.00%[78]

[77] Project fair-share percentage Column (4) = [Column (2)] / [Column (3) – Column (1)].

[78] The Projects fair share has already been accounted for in Table 11-2.

11.5 City of Brea Traffic Fees

Based on information published on the City of Brea website, the Brea City Council adopted Ordinance 966 in July 1995, establishing Traffic Fees for all new development in Brea and annexed portions of its sphere-of-influence. Based on a Transportation Improvement Nexus Program study conducted in 2011, the City Council adopted Resolution 2011-096, which updated the fees, which became effective February 4, 2012. These fees are required, in part, by Orange County's Measure M, a transportation initiative passed by voters in 1990. More importantly, these are fair-share based fees that will serve to offset, or mitigate, the addition of traffic generated by new development.

Review of ***Table 11-4*** indicates that the City's Traffic Fee rate for residential land uses range from $1,203 per dwelling unit to $1,974 per dwelling unit. For Commercial uses the City's rate ranges between $2.24 per gross square foot and $2.53 per gross square foot.

Subject to confirmation by City staff, the proposed Project's Traffic Fee totals $747,851.00 based on a net increase of 85,425 SF of regional commercial uses along with 383 medium density residential units (i.e. 85,425 SF x $2.24 per SF = $191,352 and 383 DU x $1,453 per DU = $556,499). The precise fee will be determined upon issuance of Project building permits by the City of Brea Community Development Department.

In some cases, a developer may be required to make certain traffic improvements in addition to, or in-lieu of paying traffic fees. In this case, however, the total cost of traffic improvements and/or fees will not exceed the development's fair-share toward mitigating recommended improvements.

TABLE 11-4
CITY OF BREA TRAFFIC FEE RATES [79]

Land Use Category	Unit of Development	Fee
▪ Low density residential	Per dwelling unit	$1,974
▪ Medium density residential	Per dwelling unit	$1,453
▪ High density residential	Per dwelling unit	$1,203
▪ Commercial, general, mixed use	Per gross square foot	$2.53
▪ Regional commercial	Per gross square foot	$2.24
▪ Office / industrial	Per gross square foot	$1.25
▪ School	Student	$0
▪ All other uses	Per trip end	$89

[79] Source: City of Brea website - http://www.ci.brea.ca.us/162/Traffic-Impact-Fees

12.0 INTERSECTION SAFETY EVALUATION

12.1 Caltrans Intersection Safety Evaluation

It is our understanding that Caltrans has implemented improvements at intersections along Imperial Highway within the recent years which generally include traffic signal upgrades and ADA improvements. As such, an intersection safety evaluation has been completed for all of the signalized study intersections located along Imperial Highway and Lambert Road within Caltrans jurisdiction to validate whether the recent improvements have helped reduce the collision frequency at these locations.

Five years of collision history has been researched via the Statewide Integrated Traffic Records System (SWITRS); the data was compiled from May 2016 through May 2021. ***Table 12-1*** presents a summary of the last five (5) years of accident history at the eleven (11) study intersections located along Imperial Highway and/or Lambert Road. Review of *Table 12-1* indicates that when taking into consideration the total number of collisions that occur within the project study area, the number of collisions along Imperial Highway and Lambert Road have generally declined within the last five years. Therefore, it can be concluded that the improvements implemented at these intersections have played a role in reducing the collision frequency and has generally helped increase safety at the locations.

12.2 State College Boulevard at Imperial Highway Focused Assessment

A focused safety assessment has been completed at State College Boulevard/Imperial Highway as it relates to vehicles making erratic lane changes to try and enter the SR-57 SB On-Ramp along Imperial Highway. The table below presents the accident data for State College Boulevard at Imperial Highway. Review of this data shows that collisions related to lane changes ranged between 2 to 6 collisions per year. These collisions could be corrected via modifying the SR-57 SB On-Ramp to allow for two lanes onto the freeway. It is recommended that the eastbound approach be modified to accommodate two through lanes, a shared through/right-turn lane and an exclusive right-turn lane.

State College Boulevard at Imperial Highway		
Time Period	***Total***	***Correctable***
5/16 through 5/17	33	6 (Lane Change)
5/17 through 5/18	26	2 (Lane Change)
5/18 through 5/19	28	3 (Lane Change)
5/19 through 5/20	16	2 (Lane Change)
5/20 through 5/21	19	2 (Lane Change)

TABLE 12-1
ACCIDENT HISTORY AT CALTRANS INTERSECTIONS

Study Intersection	Number of Collisions Per Year				
	2016 - 2017	2017-2018	2018-2019	2019-2020	2020-2021
2. SR-57 SB Ramps at Lambert Road	6	4	5	6	3
3. SR-57 NB Ramps at Lambert Road	8	12	7	8	6
10. Harbor Boulevard at Imperial Highway	5	9	12	2	4
11. Puente Street at Imperial Highway	9	6	13	14	9
12. Brea Boulevard at Imperial Highway	11	14	8	8	5
13. Randolph Avenue at Imperial Highway	10	4	9	6	6
14. State College Boulevard at Imperial Highway	33	26	28	16	19
15. SR-57 SB Ramps at Imperial Highway	8	3	8	7	4
16. SR-57 NB Ramps at Imperial Highway	20	18	12	8	11
17. Associated Road at Imperial Highway	11	17	14	14	15
18. Castlegate Lane/Placentia Avenue at Imperial Highway	13	8	11	6	5
Total Collisions at Caltrans Intersections	**134**	**121**	**127**	**95**	**87**

13.0 SUMMARY OF FINDINGS AND CONCLUSIONS

- ***Project Description*** – Brea Mall Mixed Use Project (hereinafter referred to as Project) in the City of Brea. The Project consists of redevelopment of 15.0-acre in the southwest portion of the Brea Mall property that includes the Sears parcel and adjoining transition areas adjacent to Nordstrom and Macy's. The Project involves demolishing 161,990 square-foot (SF) of the Sears department store and associated auto center and roughly 7.5 acres of surface parking in order to development 247,415 SF of new retail space, inclusive of a 50,000 SF sporting goods store and a 128,000 SF health club. The residential component would construct a 383-unit seven-story apartment building. The proposed Project is located west of the State Route (SR) 57 Freeway and is generally bounded by State College Boulevard to the east, Imperial Highway (State Route 91) to the south, Randolph Avenue to the west, and Birch Street to the north. The Project is expected to be developed in several phases with the Year 2026 utilized to assess the Project's potential traffic implications at full occupancy within a near-term cumulative traffic setting. The Brea Mall can be accessed from three of the four surrounding streets bordering the subject property, State College Boulevard, Randolph Avenue, and Birch Street; no vehicular access is provided from Imperial Highway. Vehicular access from Randolph Avenue is currently provided by two (2) signalized intersections, whereas one (1) signalized access is provided along Birch Street. From State College Boulevard, three (3) signalized intersections provide access to the Brea Mall. No change in access to the Brea Mall is proposed as a part of the Project. Since the Project is focused to the southwest portion of the Brea Mall property the southernmost driveways along Randolph Avenue and State College Boulevard are anticipated to be the focus of Project related trips.

- ***Study Scope*** – The following eighteen (18) key study intersections were selected for detailed peak hour level of service analyses under Existing Traffic Conditions, Year 2026 Cumulative Traffic Conditions, Year 2026 Cumulative Plus Project, Year 2045 Traffic Conditions, and Year 2045 Plus Project Traffic Conditions. It should be noted that cities that border the intersection but do not have governing jurisdictions are included in parentheses.

Study Intersection		Applicable Jurisdiction (City Location)			
		Caltrans	City of Brea	City of La Habra	City of Fullerton
	State College Boulevard at Lambert Road	--	Brea	--	--
2.	SR-57 SB Ramps at Lambert Road	Caltrans	(Brea)	--	--
3.	SR-57 NB Ramps at Lambert Road	Caltrans	(Brea)	--	--
4.	Randolph Avenue at Birch Street	--	Brea	--	--
5.	State College Boulevard at Birch Street	--	Brea	--	--
6.	S Associated Road at Birch Street	--	Brea	--	--
7.	Randolph Avenue at Madison Way	--	Brea	--	--
8.	Randolph Avenue at Brea Mall	--	Brea	--	--
9.	Brea Mall South at State College Boulevard	--	Brea	--	--
10.	Harbor Boulevard at Imperial Highway[80]	Caltrans	--	(La Habra)	(Fullerton)
11.	Puente Street at Imperial Highway	Caltrans	(Brea)	--	(Fullerton)
12.	Brea Boulevard at Imperial Highway	Caltrans	(Brea)		

[80] Orange County Congestion Management Program (CMP) intersection.

Study Intersection		Applicable Jurisdiction (City Location)			
		Caltrans	City of Brea	City of La Habra	City of Fullerton
13.	Randolph Avenue at Imperial Highway	Caltrans	(Brea)	--	--
14.	State College Blvd at Imperial Highway[1]	Caltrans	(Brea)	--	--
15.	SR-57 SB Ramps at Imperial Highway[1]	Caltrans	(Brea)	--	--
16.	SR-57 NB Ramps at Imperial Highway[1]	Caltrans	(Brea)	--	--
17.	Associated Road at Imperial Highway	Caltrans	(Brea)	--	--
18.	Castlegate Ln/Placentia Ave at Imperial Hwy	Caltrans	(Brea)	--	--

- ***Existing Traffic Conditions ICU*** – The intersection of State College Boulevard at Imperial Highway currently operates at an unacceptable LOS during the Weekend (Saturday) Midday peak hour. The remaining seventeen (17) of the eighteen (18) key study intersections evaluated under ICU analysis currently operate at an acceptable levels of service during the Weekday AM, Weekday PM, and Weekend (Saturday) Midday peak hours.

- ***Existing Traffic Conditions HCM*** – The intersection of State College Boulevard at Imperial Highway currently operates at an unacceptable LOS during the Weekday PM peak hour and Weekend (Saturday) Midday peak hour. The remaining seventeen (17) of the eighteen (18) key study intersections evaluated under HCM analysis currently operate at an acceptable levels of service during the Weekday AM, Weekday PM, and Weekend (Saturday) Midday peak hours.

- ***Project Trip Generation*** – The proposed Project with the existing Brea Mall is forecast to generate approximately 33,976 Weekday daily trips, with 1,067 trips (622 inbound, 445 outbound) produced in the Weekday AM peak hour and 3,556 trips (1,789 inbound, 1,767 outbound) produced in the Weekday PM peak hour on a "typical" weekday. The proposed Project with the existing Brea Mall is forecast to generate 42,060 Saturday daily trips, with 4,484 trips (2,274 inbound, 2,210 outbound) produced in the Saturday Midday peak hour on a "typical" Saturday.

  When the proposed Project is compared to an existing fully occupied Brea Mall site, the proposed Project is forecast to generate 3,159 more Weekday daily trips, 310 more Weekday AM peak hour trips, 309 more Weekday PM peak hour trips, 2,877 more Saturday daily trips, and 280 more Saturday Midday peak hour trips. The potential implications of these added Project trips to the local area roadway network has been evaluated in this traffic analysis.

- ***Related Projects Traffic Characteristics*** **–** There are thirty-two (32) related projects that have been included as part of the cumulative setting. The related projects are expected to generate 38,681 weekday daily trips, with 2,992 trips (1,479 inbound, 1,513 outbound) anticipated during the weekday AM peak hour and 3,561 trips (1,786 inbound, 1,775 outbound) produced during the weekday PM peak hour. On a weekend (Saturday), the related projects are forecast to generate 38,164 weekend daily trips, with 3,909 trips (2,074 inbound, 1,835 outbound) anticipated during the weekend midday peak hour.

- ***Year 2026 Cumulative Traffic Conditions Plus Project ICU*** – One (1) of the eighteen (18) key study intersections will continue to operate at unacceptable levels of services during the Weekday PM peak hour and Weekend (Saturday) Midday peak hour when compared to the LOS standards specified in this report. The intersections forecast to operate adversely are as follows:

Key Intersection
14. State College Boulevard at Imperial Highway

  However, the implementation of recommended improvements at the intersection results in better service levels than pre-Project conditions.

- ***Year 2026 Cumulative Traffic Conditions Plus Project HCM*** – One (1) of the eighteen (18) key study intersections will continue to operate at unacceptable levels of services during the Weekday PM peak hour and Weekend (Saturday) Midday peak hour when compared to the LOS standards specified in this report. The intersections forecast to operate adversely are as follows:

Key Intersection
14. State College Boulevard at Imperial Highway

  However, the implementation of recommended improvements at the intersection results in service levels than pre-Project conditions.

- ***Year 2045 Traffic Conditions Plus Project ICU*** – Five (5) of the eighteen (18) key study intersections will continue to operate at unacceptable levels of services during the Weekday PM peak hour and Weekend (Saturday) Midday peak hour when compared to the LOS standards specified in this report. The intersections forecast to operate adversely are as follows:

Key Intersection
10. Harbor Boulevard at Imperial Highway
12. Brea Boulevard at Imperial Highway
14. State College Boulevard at Imperial Highway
16. SR-57 NB Ramps at Imperial Highway
17. Associated Road at Imperial Highway

  However, implementation of recommended improvements at the intersections of State College Blvd at Imperial Highway (Intersection #14) offsets the Project's increment. After implementation of the recommended improvements, the intersection is forecast to operate at better service levels than pre-Project conditions. It should be noted that the intersection of Harbor Blvd at Imperial Highway (Intersection #10), Brea Blvd at Imperial Highway (Intersection #12), SR-57 NB Ramps at Imperial (intersection #16) and Associated Road at Imperial Highway (Intersection #17) does not satisfy the criteria defined in this report to require improvements.

- ***Year 2045 Traffic Conditions Plus Project HCM*** – Two (2) of the eighteen (18) key study intersections will continue to operate at unacceptable levels of services during the Weekday PM peak hour and Weekend (Saturday) Midday peak hour when compared to the LOS standards specified in this report. The intersections forecast to operate adversely are as follows:

Key Intersection
10. Harbor Boulevard at Imperial Highway
14. State College Boulevard at Imperial Highway

  However, the implementation of recommended improvements at the intersection of State College Blvd at Imperial Highway (Intersection #14) offsets the Project's increment. After implementation of the recommended improvements at the intersection State College Blvd at Imperial Highway (Intersection #14) are forecast to operate at better service levels than pre-Project conditions. It should be noted that the intersection of Harbor Blvd at Imperial Highway (Intersection #10) does not satisfy the criteria defined in this report to require improvements.

- The following improvements listed below are part of the SR-57 Lambert Interchange improvement project, now under construction, that have been included in the Year 2026 and Year 2045 background traffic conditions:
  - **No. 2 – SR-57 SB Ramps at Lambert Road:** Widen the off-ramp to provide a second exclusive southbound left-turn lane. Restripe the shared southbound left-turn/through/right-turn lane to a second exclusive right-turn lane. Widen to provide a second exclusive eastbound right-turn lane. Modify the existing traffic signal.

  - **No. 3 – SR-57 NB Ramps at Lambert Road:** Construct a loop on-ramp on the south leg. Remove dual eastbound exclusive left-turn lanes. Widen and restripe to provide a shared eastbound through/right-turn lane and an exclusive eastbound right-turn lane. Reconstruct the existing on-ramp for a free westbound right-turn lane. Modify the existing traffic signal.
- ***Year 2026 Cumulative Plus Project Recommended Improvements (ICU)*** – Based on the LOS criteria defined in this report the following improvements are recommended:
  - **No. 14 – State College Boulevard at Imperial Highway:** Conduct median modifications and restripe the southbound approach to provide an exclusive southbound right-turn lane. Modify the median and restripe the No. 2 SB left-turn lane into a trap left turn lane. Modify the existing traffic signal, as necessary.

  - **No. 15 – SR-57 Southbound Ramps at Imperial Highway:** Restripe the No. 3 eastbound through lane along Imperial at the SR-57 southbound on-ramp to be converted to a shared through/right-turn lane. Modify the on-ramp to allow for two receiving lanes. Modify the existing traffic signal, as necessary.
- ***Year 2026 Cumulative Plus Project Recommended Improvements (HCM)*** – Based on the LOS criteria defined in this report the following improvements are recommended:

- **No. 14 – State College Boulevard at Imperial Highway:** Conduct median modifications and restripe the southbound approach to provide an exclusive southbound right-turn lane. Modify the median and restripe the No. 2 SB left-turn lane into a trap left turn lane. Modify the existing traffic signal, as necessary.

- **No. 15 – SR-57 Southbound Ramps at Imperial Highway:** Restripe the No. 3 eastbound through lane along Imperial at the SR-57 southbound on-ramp to be converted to a shared through/right-turn lane. Modify the on-ramp to allow for two receiving lanes. Modify the existing traffic signal, as necessary.

- ***Year 2045 Plus Project Recommended Improvements (ICU)*** – Based on the LOS criteria defined in this report the following improvements are recommended:
  - **No. 14 – State College Boulevard at Imperial Highway:** Conduct median modifications and restripe the southbound approach to provide an exclusive southbound right-turn lane. Modify the median and restripe the No. 2 SB left-turn lane into a trap left turn lane. Modify the existing traffic signal, as necessary.
  - **No. 15 – SR-57 Southbound Ramps at Imperial Highway:** Restripe the No. 3 eastbound through lane along Imperial at the SR-57 southbound on-ramp to be converted to a shared through/right-turn lane. Modify the on-ramp to allow for two receiving lanes. Modify the existing traffic signal, as necessary.

- ***Year 2045 Plus Project Recommended Improvements (HCM)*** – Based on the LOS criteria defined in this report the following improvements are recommended:
  - **No. 14 – State College Boulevard at Imperial Highway:** Conduct median modifications and restripe the southbound approach to provide an exclusive southbound right-turn lane. Modify the median and restripe the No. 2 SB left-turn lane into a trap left turn lane. Modify the existing traffic signal, as necessary.
  - **No. 15 – SR-57 Southbound Ramps at Imperial Highway:** Restripe the No. 3 eastbound through lane along Imperial at the SR-57 southbound on-ramp to be converted to a shared through/right-turn lane. Modify the on-ramp to allow for two receiving lanes. Modify the existing traffic signal, as necessary.

- ***Site Access Assessment –*** The intersections of Randolph Avenue at Madison Way, Randolph Avenue at Brea Mall, and Brea Mall South at State College Boulevard are forecast to operate at LOS D or better during the Weekday AM, Weekday PM, and Weekend (Saturday) Midday peak hours in all traffic conditions.

- ***Year 2026 Project Fair-Share Contribution –***The Project can be expected to pay a proportional "fair-share" of the recommended improvements at two (2) degraded intersections, which are identified below. It should be noted that the intersection improvements identified for SR-57 Southbound Ramps at Imperial Highway are part of the City's Capital Improvement Program (CIP), therefore, the Projects contribution towards the City of Brea Traffic Fees may satisfy a

portion of their fair share obligations at this location. It is our understanding that detailed cost estimates will be provided to the City to help determine the exact fair share amount. It should be also be noted that while fair share costs have been calculated Caltrans has no mechanism by which the Project can contribute fair share fees.

Key Intersection	City/ Jurisdiction	Project Fair-Share Contribution
14. State College Boulevard at Imperial Highway	Brea/Caltrans	19.51%
15. SR-57 SB Ramps at Imperial Highway	Brea/Caltrans	17.39%

- ***Traffic Fees*** – The proposed Project's Traffic Fee totals $747,851.00 based on a net increase of 85,425 SF of regional commercial uses along with 383 medium density residential units (i.e. 85,425 SF x $2.24 per SF = $191,352 and 383 DU x $1,453 per DU = $556,499). The precise fee will be determined upon issuance of Project building permits by the City of Brea Community Development Department.

- ***Year 2026 Caltrans Queuing Analysis*** - One (1) of the two (2) study intersections have queues which exceed the provided storage capacity for one or more intersection approach with the addition of proposed Project traffic to Year 2026 cumulative traffic conditions. The remaining study intersection has queues that are adequately accommodated by the provided storage space. The intersections/approaches with storage deficiencies include the following:

    - Intersection No. 14: State College Boulevard at Imperial Highway
        - Southbound Left-Turn: PM Peak Hour and Saturday Midday Peak Hour
        - Westbound Right-Turn: Saturday Midday Peak Hour

  Review of column (3) of *Table 9-1* indicates that the southbound left-turn and westbound right turn at State College Boulevard at Imperial Highway (Intersection No. 14) exceeds the storage capacity and the added project trips would increase these movements by more than one vehicle. However, with the recommended improvements this intersection would operate better than pre-Project conditions for the southbound left-turn. It should be noted that the westbound right-turn has constraints that does not allow for any feasible improvements to be implemented. Therefore, the westbound right-turn pocket will continue to exceed the pocket.

- ***Year 2045 Caltrans Queuing Analysis*** – One (1) of the two (2) study intersections have queues which exceed the provided storage capacity for one or more intersection approach with the addition of proposed Project traffic to Year 2045 buildout traffic conditions. The remaining study intersection has queues that are adequately accommodated by the provided storage space. The intersections/approaches with storage deficiencies include the following:

    - Intersection No. 14: State College Boulevard at Imperial Highway
        - Southbound Left-Turn: PM Peak Hour and Saturday Midday Peak Hour
        - Westbound Right-Turn: Saturday Midday Peak Hour

Review of column (3) of *Table 9-1* indicates that the southbound left-turn and westbound right turn at State College Boulevard at Imperial Highway (Intersection No. 14) exceeds the storage capacity and the added project trips would increase these movements by more than one vehicle. However, with the recommended improvements this intersection would operate better than pre-Project conditions for the southbound left-turn. It should be noted that the westbound right-turn has constraints that does not allow for any feasible improvements to be implemented. Therefore, the westbound right-turn pocket will continue to exceed the pocket.

- ***State College Boulevard at Imperial Highway Focused Assessment*** – A focused safety assessment has been completed at State College Boulevard/Imperial Highway as it relates to vehicles making erratic lane changes to try and enter the SR-57 SB On-Ramp along Imperial Highway. The table below presents the accident data for State College Boulevard at Imperial Highway. Review of this data shows that collisions related to lane changes ranged between 2 to 6 collisions per year. These collisions could be corrected via modifying the SR-57 SB On-Ramp to allow for two lanes onto the freeway. It is recommended that the eastbound approach be modified to accommodate two through lanes, a shared through/right-turn lane and an exclusive right-turn lane.

State College Boulevard at Imperial Highway		
Time Period	***Total***	***Correctable***
5/16 through 5/17	33	6 (Lane Change)
5/17 through 5/18	26	2 (Lane Change)
5/18 through 5/19	28	3 (Lane Change)
5/19 through 5/20	16	2 (Lane Change)
5/20 through 5/21	19	2 (Lane Change)

APPENDIX A

TRAFFIC STUDY SCOPE OF WORK

MEMORANDUM

To:	Dave Roseman, P.E., City Traffic Engineer City of Brea	Date:	April 4, 2022
From:	Richard E. Barretto, P.E., Principal Linscott, Law & Greenspan, Engineers	LLG Ref:	2.19.4099.1
Subject:	***Traffic Circulation Assessment Scope of Work for Brea Mall Mixed-Use Project Brea, California***		

Linscott, Law & Greenspan, Engineers (LLG) is pleased to submit the following Scope of Work for the Traffic Circulation Assessment for the proposed Brea Mall Mixed-Use Project in the City of Brea for your review and approval. It is our understanding that a Traffic Circulation Assessment is required to provide consistency with the General Plan, and further the updated traffic analysis (LOS study) is necessary to evaluate the potential traffic impact of two development options of the proposed Project. The work program summarized below is based on our current experience within the City and prior coordination efforts with City staff. The *Traffic Impact Analysis Report for the Brea Mall Mixed-Use Project, dated January 9, 2020,* which was incorporated in the Project's Draft EIR, will serve as a database and reference for this study to provide consistency with the previously prepared traffic report.

Circulation Assessment Scope of Work

A. Project Location: The Brea Mall Mixed-Use Project is located in the southwest quadrant of the Brea Mall along Randolph Avenue and Imperial Highway in the City of Brea, California. ***Figure 1-1*** presents a Vicinity Map that illustrates the general location of the Project and surrounding street system. ***Figure 2-1*** is an existing aerial photograph of the Project site.

B. Project Description:

Existing Brea Mall

The existing Brea Mall site is 1,291,433 square feet (SF) of Gross Leasable Area (GLA) consisting of several major department stores and a mixture of retail shops and restaurant/food uses. It should be noted that the first floor of the vacant Sears department store has been re-occupied by Q's fashion retail store and the second story totaling 80,995 GLA SF is currently still vacant.

Proposed Project

The retail component of the proposed Project, up to 247,415 SF of additional retail space, inclusive of a 50,000 SF sporting goods store and a 128,000 SF health club will be constructed. The residential component of the proposed Project, which would be developed south of the Nordstrom's parking structure,

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David S. Shender, PE
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Keil D. Maberry, PE

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includes the development of a seven-story, 441,027 SF apartment podium with up to 383 apartment homes consisting of 28 studio units, 215 one-bedroom units and 140 two-bedroom units.

Table 2-1 provides the Project development summary. A review of *Table 2-1* indicates that upon completion of the Project, Brea Mall will have total GLA of 1,376,858 SF and a 383-unit apartment community.

C. Traffic Study Locations: The following twenty-nine (29) key study intersections were identified for analysis based on the prior traffic study for the Brea Mall.

Key Study Intersections

1. Puente Street at Lambert Road
2. Brea Boulevard at Lambert Road
3. State College Boulevard at Lambert Road
4. SR-57 SB Ramps at Lambert Road
5. SR-57 NB Ramps at Lambert Road
6. Santa Fe Road/Kraemer Boulevard at Lambert Road
7. Brea Boulevard at Birch Street
8. Randolph Avenue at Birch Street
9. State College Boulevard at Birch Street
10. S Associated Road at Birch Street
11. N Associated Road at Birch Street
12. Kraemer Boulevard at Birch Street
13. Randolph Avenue at Madison Way
14. Randolph Avenue at Brea Mall
15. Brea Mall South at State College Boulevard
16. Harbor Boulevard at Imperial Highway
17. Puente Street at Imperial Highway
18. Brea Boulevard at Imperial Highway
19. Randolph Avenue at Imperial Highway
20. State College Boulevard at Imperial Highway
21. SR-57 SB Ramps at Imperial Highway
22. SR-57 NB Ramps at Imperial Highway
23. Associated Road at Imperial Highway
24. Castlegate Lane/Placentia Avenue at Imperial Highway
25. Kraemer Boulevard at Imperial Highway

26. Brea Boulevard at Bastanchury Road
27. State College Boulevard at Bastanchury Road
28. Placentia Avenue at Bastanchury Road
29. Kraemer Boulevard at Bastanchury Road

As a result of SB743, traffic studies are no longer a CEQA requirement. Based on discussion with City staff, the following eighteen (18) study locations are recommended for evaluation. Subject to confirmation by the City Traffic Engineer, Level of Service (LOS) calculations would be prepared at these locations:

Key Study Intersections

3. State College Boulevard at Lambert Road
4. SR-57 SB Ramps at Lambert Road
5. SR-57 NB Ramps at Lambert Road
8. Randolph Avenue at Birch Street
9. State College Boulevard at Birch Street
10. S Associated Road at Birch Street
13. Randolph Avenue at Madison Way
14. Randolph Avenue at Brea Mall
15. Brea Mall South at State College Boulevard
16. Harbor Boulevard at Imperial Highway[1]
17. Puente Street at Imperial Highway
18. Brea Boulevard at Imperial Highway
19. Randolph Avenue at Imperial Highway
20. State College Boulevard at Imperial Highway[1]
21. SR-57 SB Ramps at Imperial Highway[1]
22. SR-57 NB Ramps at Imperial Highway[1]
23. Associated Road at Imperial Highway
24. Castlegate Lane/Placentia Avenue at Imperial Highway

Figure 1-1 identifies the study locations.

D. Traffic Counts: Based on current conditions, due to COVID-19 virus, the ability to collect traffic counts to establish baseline conditions is not possible. As such, to establish existing "baseline" traffic conditions, pre-COVID-19, LLG has

[1] Orange County Congestion Management Program (CMP) intersection.

researched historical data and was able to obtain Year 2018/2019 counts at all eighteen (18) key study locations. As such, to establish existing "baseline" traffic conditions and to account for recently occupied developments such as In-N-Out which is located at Randolph Avenue and Imperial Highway, a conservative growth factor of 5% will be applied to the Year 2018/2019 conditions to establish Year 2021 pre-COVID-19 baseline traffic conditions.

E. Project Traffic Generation: The trip generation potential of the proposed Project will be estimated using trip rates contained in the 10th Edition of *Trip Generation,* published by the Institute of Transportation Engineers (ITE), [Washington, D.C., 2017].

Table 5-1 summarizes the trip generation rates used in forecasting the vehicular trips generated by the proposed Project and also presents the project's forecast peak hour and daily traffic volumes. As shown in the upper portion of *Table 5-1***,** ITE Land Use 221: Multifamily Housing (Mid-Rise) trip rates and ITE Land Use 820: Shopping Center equations, and empirical rates from existing Lifetime Fitness facilities will be used to forecast the trip generation potential of a fully occupied existing Brea Mall and site as well as the Project.

A review of the middle portion of *Table 5-1* indicates that a fully occupied Brea Mall (including the currently vacant second story of Sears) (Row B) is forecast to generate approximately 30,817 Weekday daily trips, with 757 trips (469 inbound, 288 outbound) produced in the Weekday AM peak hour and 3,247 trips (1,559 inbound, 1,688 outbound) produced in the Weekday PM peak hour on a "typical" weekday. A fully occupied Brea Mall is forecast to generate 39,183 Saturday daily trips, with 4,204 trips (2,186 inbound, 2,018 outbound) produced in the Saturday Midday peak hour on a "typical" Saturday.

The lower portion of *Table 5-1* presents the trip generation associated with the existing occupied Brea Mall and the additional proposed Project uses (Row C). A review of the lower portion of this table indicates that the proposed Project with the existing Brea Mall is forecast to generate approximately 33,976 Weekday daily trips, with 1,067 trips (622 inbound, 445 outbound) produced in the Weekday AM peak hour and 3,556 trips (1,789 inbound, 1,767 outbound) produced in the Weekday PM peak hour on a "typical" weekday. The proposed Project with the existing Brea Mall is forecast to generate 42,060 Saturday daily trips, with 4,484 trips (2,274 inbound, 2,210 outbound) produced in the Saturday Midday peak hour on a "typical" Saturday.

When the proposed Project is compared to an existing fully occupied Brea Mall site, the proposed Project is forecast to generate 3,159 more Weekday daily trips,

310 more Weekday AM peak hour trips, 309 more Weekday PM peak hour trips, 2,877 more Saturday daily trips, and 280 more Saturday Midday peak hour trips. The potential impact of these added Project trips will be evaluated in the traffic analysis.

F. Project Trip Distribution Pattern: See attached ***Figures 5-1*** and ***5-2*** for the commercial and residential components, respectively, for review by the City. The project trip distributions have been distributed and assigned to the adjacent street system based on the following considerations:

- Recognition that the Brea Mall draws traffic from the surrounding region and is not just a local area attraction.
- location of site access points in relation to the surrounding street system,
- the site's immediate proximity to major traffic carriers and regional access routes, such as the SR-57 Freeway and SR-90 (Imperial Highway),
- physical characteristics of the circulation system such as lane channelization and presence of traffic signals that affect travel patterns,
- presence of traffic congestion in the surrounding vicinity,
- ingress/egress availability at the project site, and
- input by City Staff.

G. Near-Term Cumulative Background Traffic:

- Project Completion Year: 2026
- Ambient Growth Rate: 1% per year
- Cumulative Projects: Planned and/or approved projects are presented in ***Table 6-1.***

H. General Plan Buildout Traffic: General Plan Buildout (Year 2045) traffic volume forecasts will be developed based on OCTAM 5.0 approved computer traffic model runs for baseline conditions and buildout conditions for the AM and PM peak periods and daily traffic conditions. Forecast future buildout traffic volumes using the following methodology:

a. Peak period traffic volumes will be converted to peak hour (i.e., one-hour) traffic volumes using a conversion factor of 0.3566 for the AM peak hour and 0.2662 for the PM peak hour;
b. Calculate the difference between the baseline and buildout peak period traffic volumes and convert to AM and PM peak hour (i.e., one-hour) link traffic volumes;
c. Link traffic volumes (i.e., two-way directional traffic volumes on each roadway segment) will be post-processed using the "b-turns" program and the relationship of the base year validation model run output to the base

year "ground" traffic counts to develop buildout AM and PM peak hour traffic volumes.

I. Analysis Scenarios: Prepare Weekday AM, PM and Saturday Midday peak hour Level of Service (LOS) calculations at the eighteen (18) key study intersections to determine the potential impacts of the proposed Project. The following traffic scenarios will be prepared.

1. Existing Baseline (Existing + Fully Occupied Mall) Traffic Conditions;
2. Near-Term (Year 2026) Background Traffic Conditions (Existing plus Ambient Growth plus Related Projects);
3. Near-Term (Year 2026) Background Plus Project Traffic Conditions;
4. Scenario (3) with improvements to be implemented as conditions of approval (COA), if necessary;
5. General Plan Buildout[2] (Year 2045) Traffic Conditions;
6. General Plan Buildout (Year 2045) Plus Project Traffic Conditions; and
7. Scenario (8) with improvements to be implemented as conditions of approval (COA), if necessary.

J. LOS Methodology: The LOS calculations will be based on the HCM 6th Edition methodology for both signalized and unsignalized intersections to be consistent with the City of Brea Transportation Impact Analysis (TIA) Guidelines. Additionally, the LOS calculations will also be based on the Intersection Capacity Utilization (ICU) methodology for signalized intersections to be consistent with the City of Brea General Plan.

The HCM calculations will utilize the following parameters:

- Utilization of exiting cycle length and pedestrian timing parameters,
- Minimum left-turn split time, including clearance interval timing = 10 seconds
- Saturation flow rates:
  - Thru and Right-turns = 1,900 vehicles per hour (vph)
  - Left-turns = Single Lane: 1,800 vph, Dual Lanes = 3,500 vph

The ICU calculations will utilize the following parameters:

- Lane capacity of 1,700 vph for through and all turn lanes with a clearance adjustment factor of 0.05

Subject to confirmation by the City Traffic Engineer, the following LOS review criteria will be used to assess the need for potential Project-related improvements in relation to the guidance provided in the City of Brea General Plan:

[2] It should be noted that the General Plan Buildout assessment has been included since the proposed Project would require an amendment to the General Plan to accommodate a change is Zoning to allow for residential uses.

- HCM Methodology:
  - The Project causes one or more study intersections operating at LOS D or better to degrade to LOS E or F, or
  - The Project causes a change in control delay of 4 seconds for intersections already operating at LOS E, or
  - The Project causes a change in control delay of 2 seconds for intersections already operating at LOS F.

- ICU Methodology:
  - The Project causes an intersection operating at LOS D or better to degrade to LOS E or F, or
  - The Project increases traffic demand at a signalized study intersection by 0.020 or greater and the intersection is forecast to operate at LOS E or F.

K. Other Issues:

- Evaluate site access and internal circulation of the proposed Project
- Conduct a queuing evaluation at Project driveways to assess internal circulation needs.
- Conduct a safety evaluation at all key study intersections which will include 5 years of collision history data. Recommend physical and/or timing changes to improve safety where applicable.
- Conduct a queuing evaluation at all key study intersections located along Imperial Highway, inclusive of the SR-57 off-ramps to Imperial Highway to address potential Caltrans concerns/comments.
- Perform an active transportation facilities assessment of the near-by roadways as it relates to pedestrian mobility and bicycle mobility.
- Provide documentation of existing near-by transit facilities and transit routes that provide services to the site, as well as document existing bikeway facilities/trails.
- Prepare a standalone VMT screening memo.

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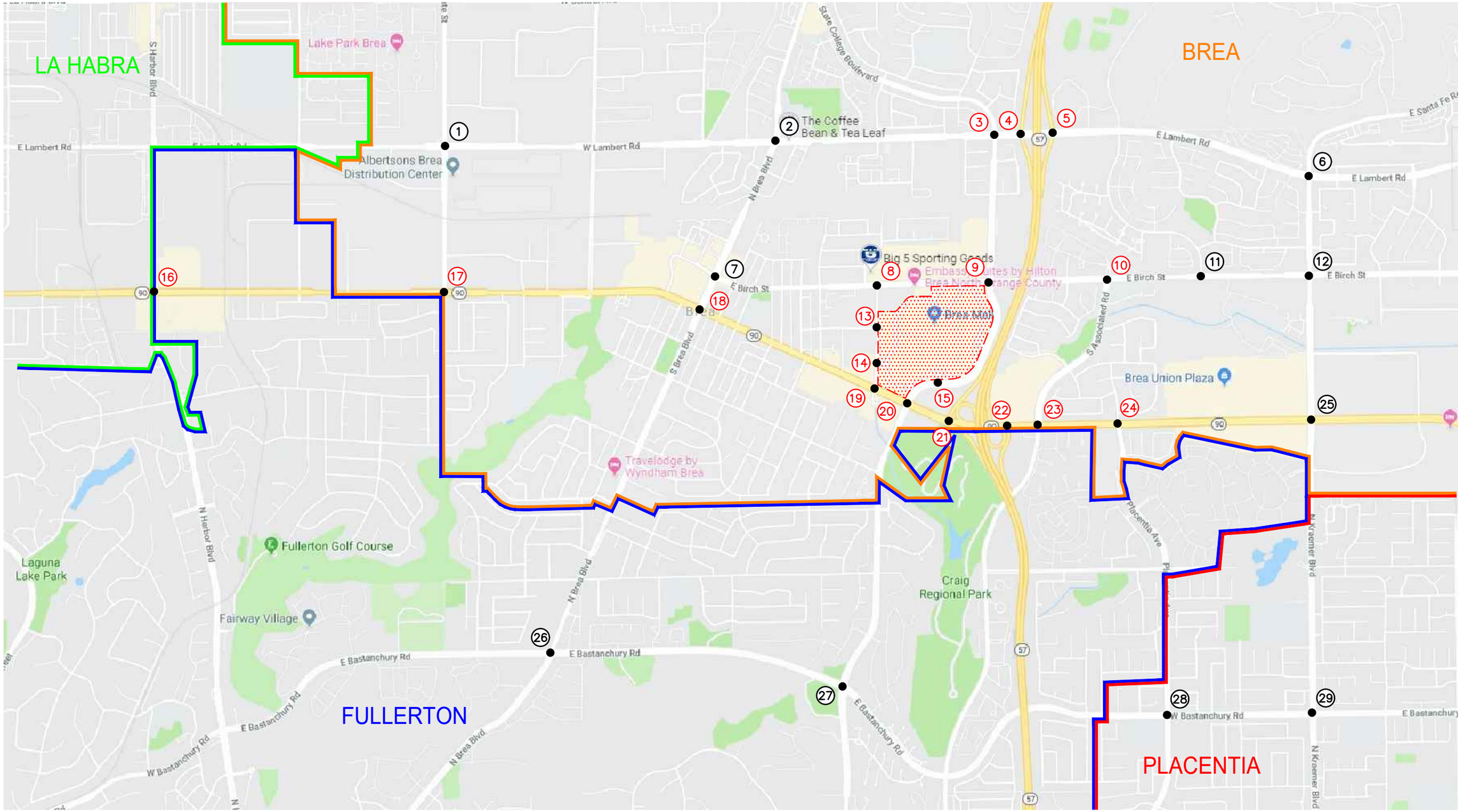
We appreciate the opportunity to provide this scope of work. Should you have any questions, please call us at (949)825-6175. Thank you.

Approved by:

_____ _____

City of Brea Date

cc. File
Shane Green, P.E., LLG



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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

SOURCE: GOOGLE

KEY

(#) = STUDY INTERSECTION BASED ON PRIOR BREA MALL STUDY

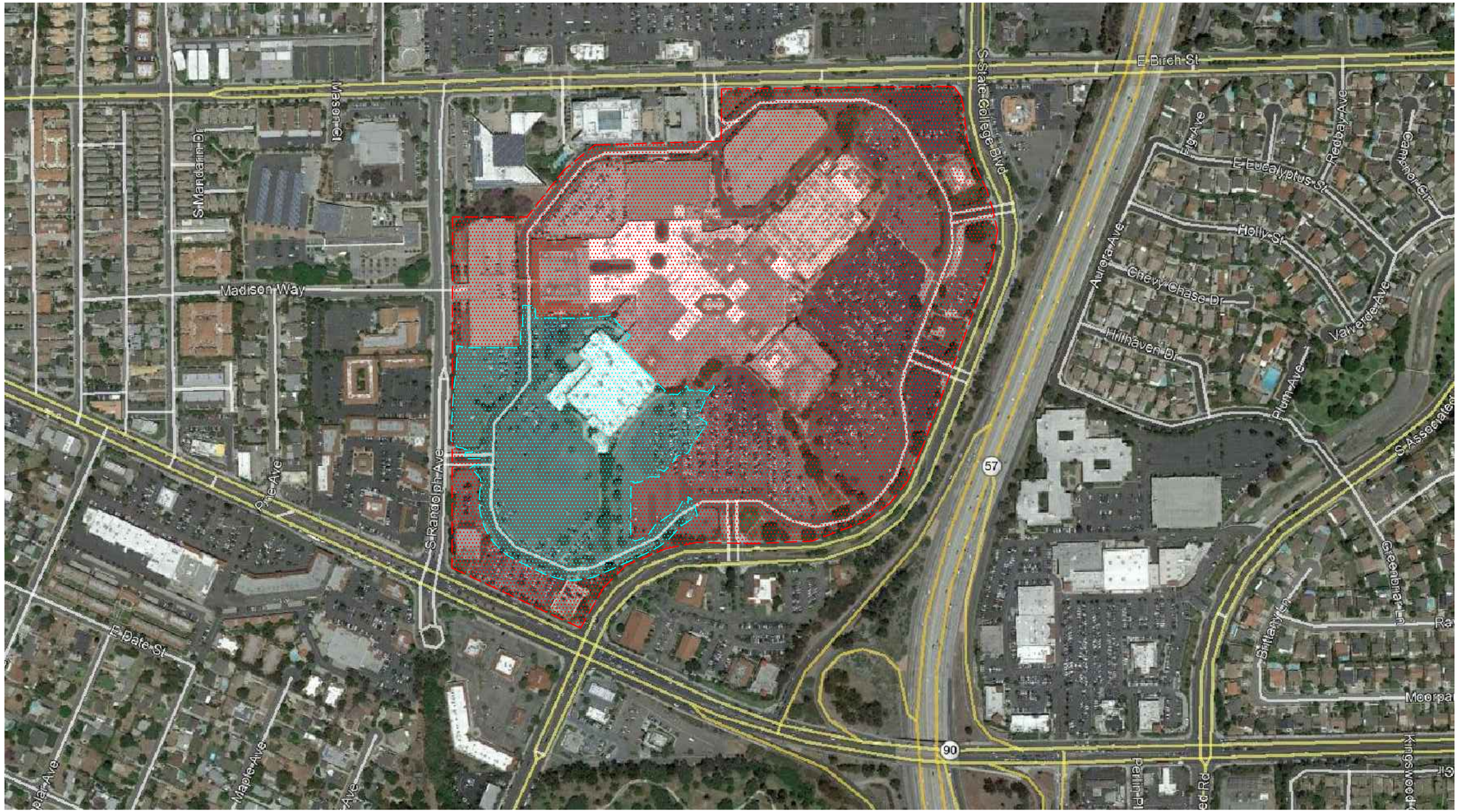
(#) = RECOMMENDED STUDY INTERSECTION

= PROJECT SITE

FIGURE 1-1

VICINITY MAP

BREA MALL MIXED-USE PROJECT, BREA



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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

SOURCE: GOOGLE

KEY

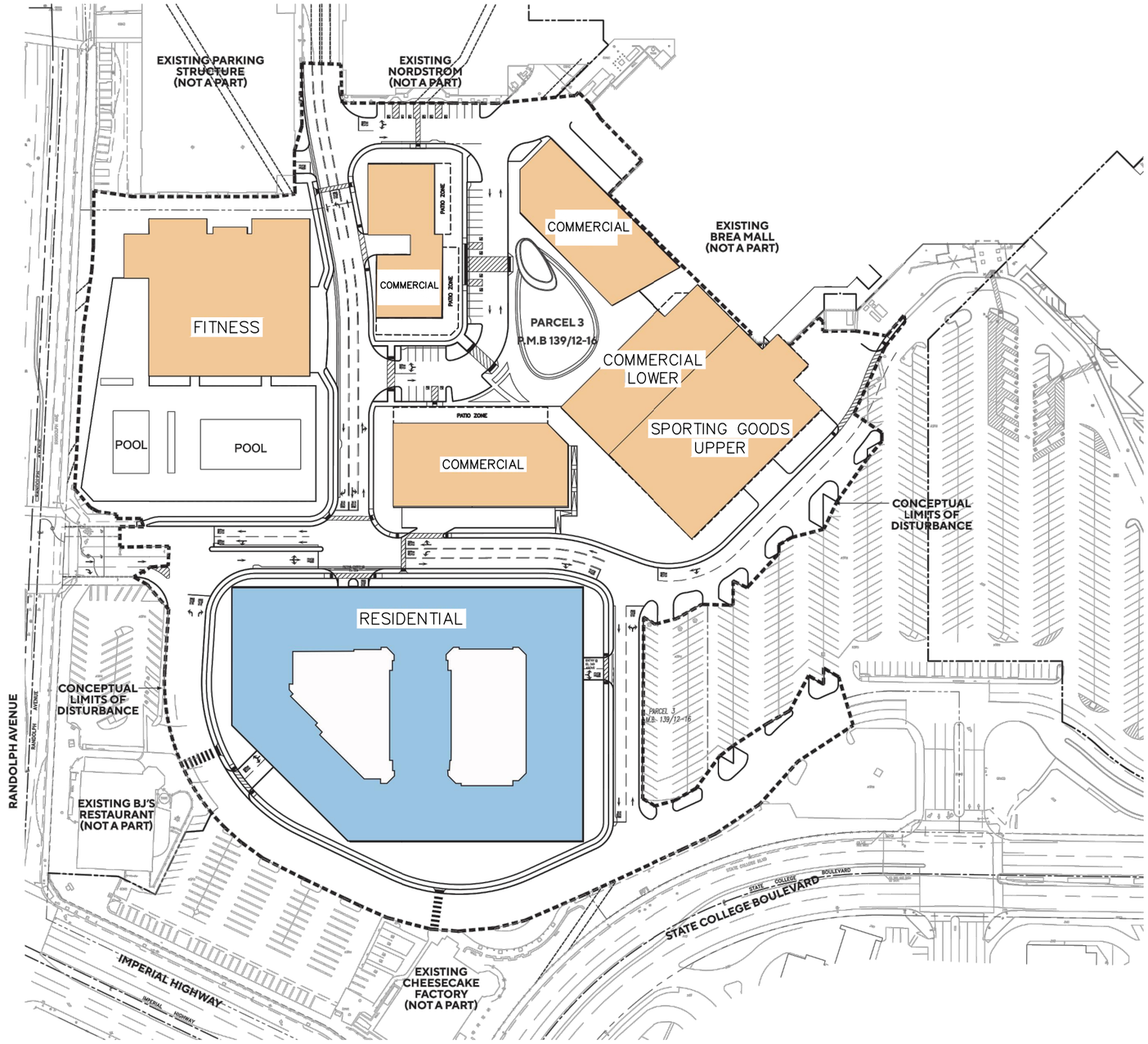
= BREA MALL

= PROJECT SITE

FIGURE 2-1

EXISTING AERIAL PHOTOGRAPH

BREA MALL MIXED-USE PROJECT, BREA



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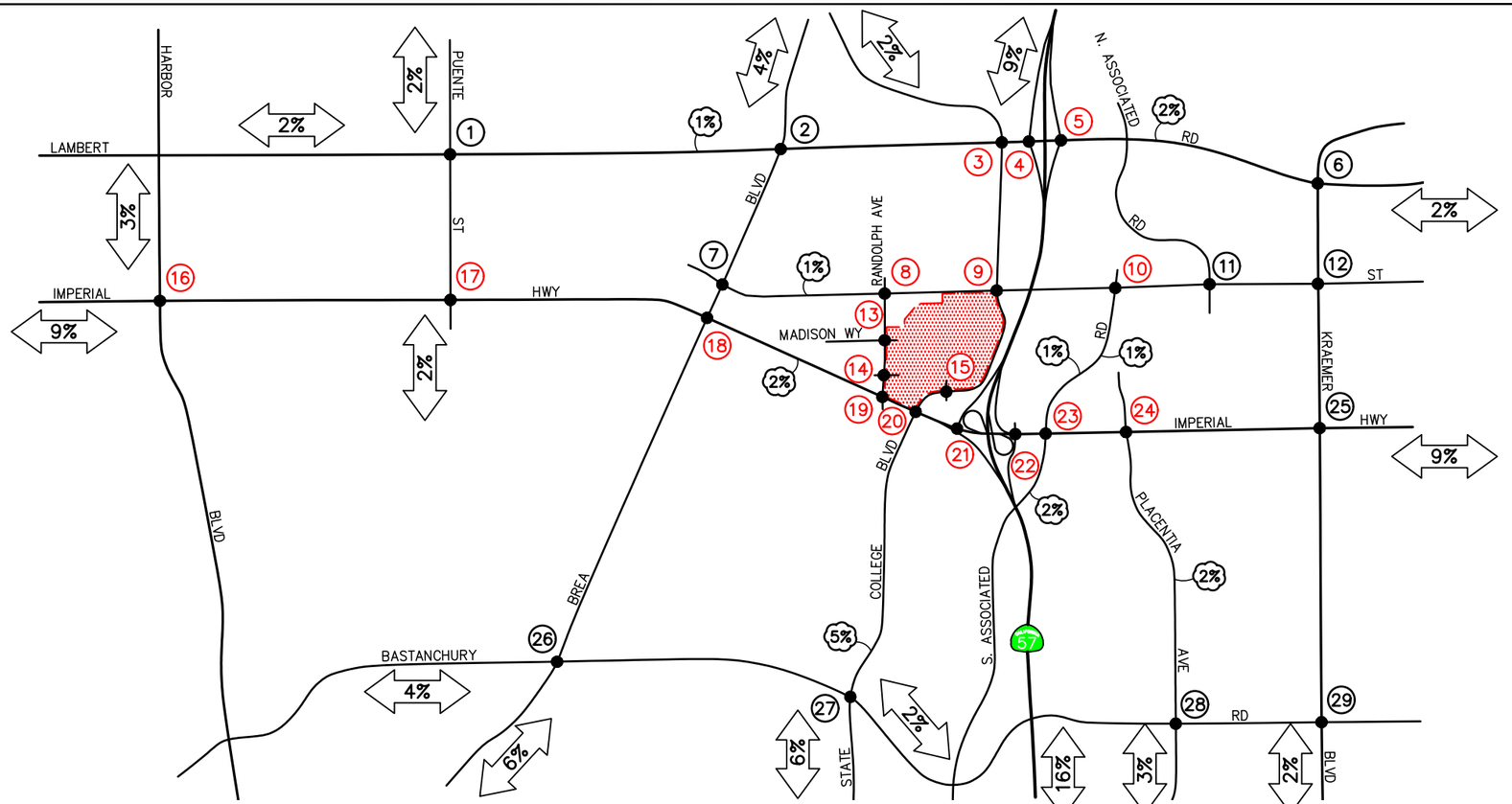
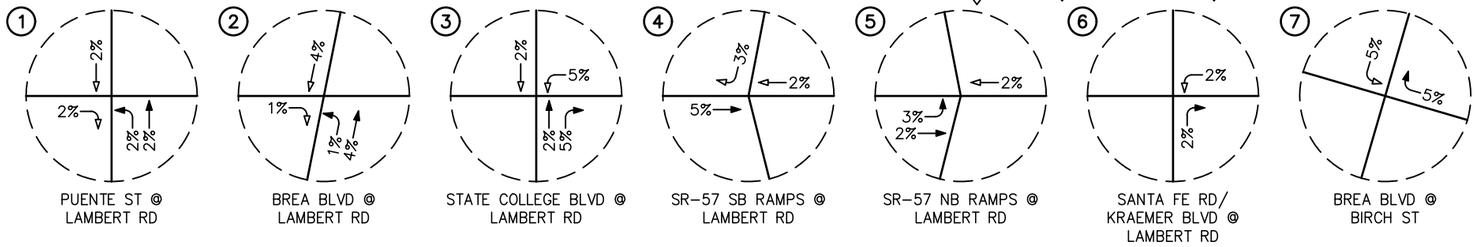
SOURCE: ARCHITECTURE AND DESIGN FIRM AO

FIGURE 2-2

PROPOSED SITE PLAN

BREA MALL EXPANSION & IMPROVEMENT, BREA





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NO SCALE

KEY

(#) = STUDY INTERSECTION BASED ON PRIOR BREA MALL STUDY

(#) = RECOMMENDED STUDY INTERSECTION

= INBOUND PERCENTAGE

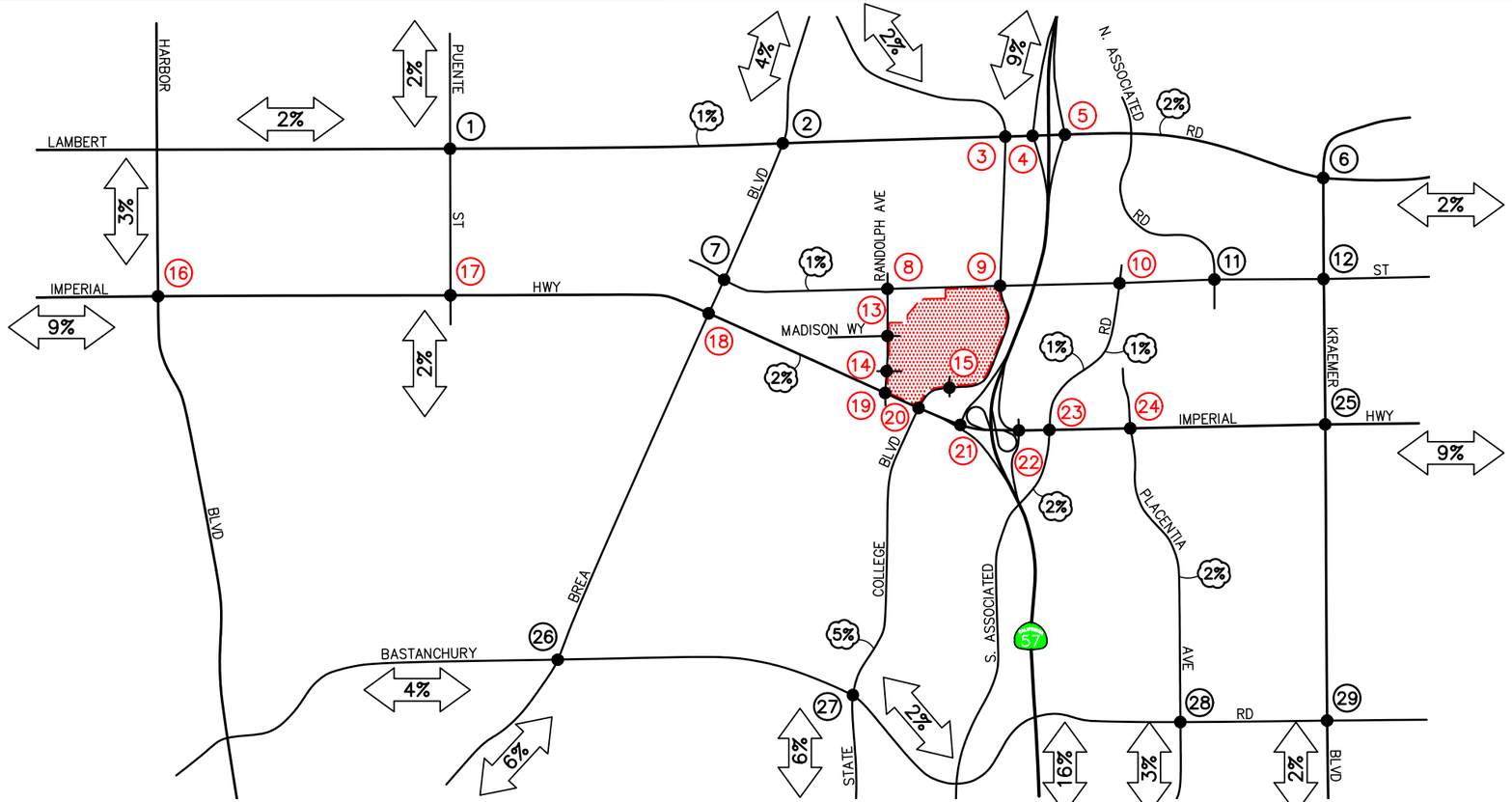
= OUTBOUND PERCENTAGE

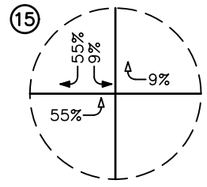
= PROJECT SITE

FIGURE 5-1A

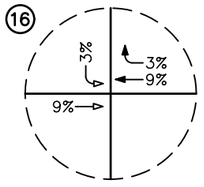
PROJECT TRIP DISTIBUTION – COMMERCIAL

BREA MALL MIXED-USE PROJECT, BREA

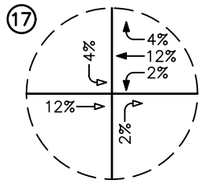




BREA MALL SOUTH @
STATE COLLEGE BLVD



HARBOR BLVD @
IMPERIAL HWY



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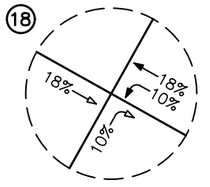

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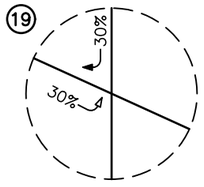

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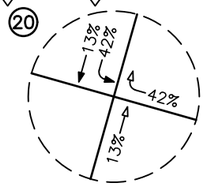

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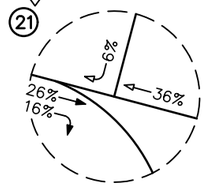

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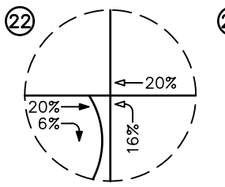

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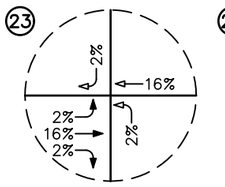

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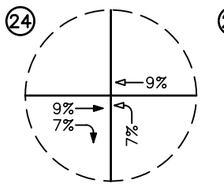

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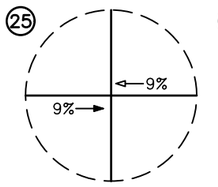
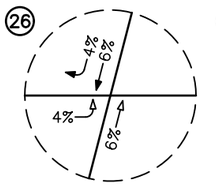
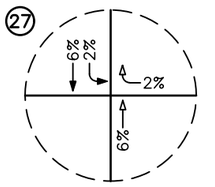


CASTLEGATE LN/
KRAEMER BLVD @
IMPERIAL HWY



BREA BLVD @
BASTANCHURY RD



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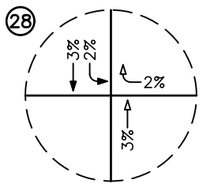

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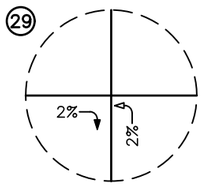

KRAEMER BLVD @
BASTANCHURY RD

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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

(#) = STUDY INTERSECTION BASED ON PRIOR BREA MALL STUDY

(#) = RECOMMENDED STUDY INTERSECTION

= INBOUND PERCENTAGE

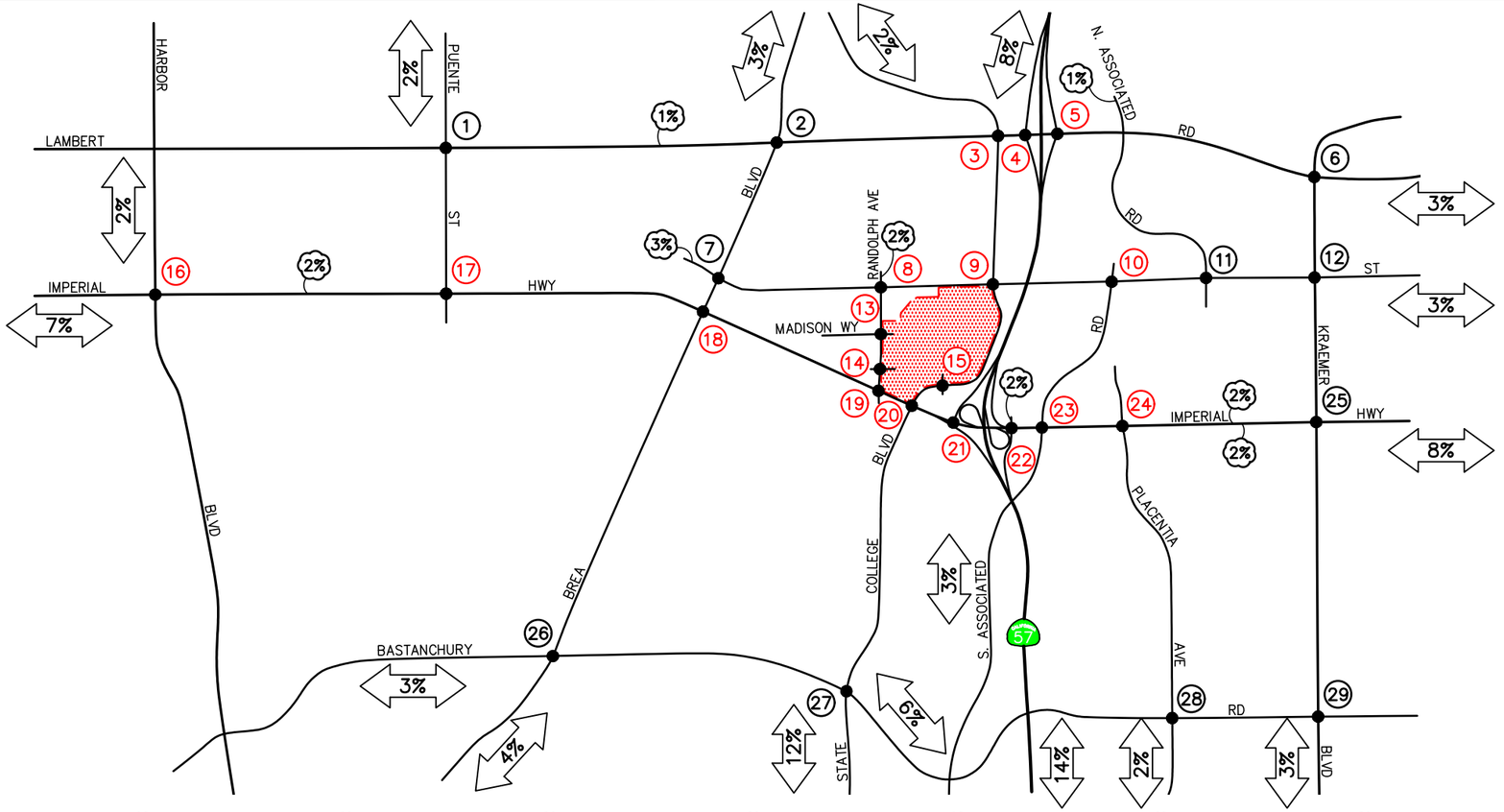
= OUTBOUND PERCENTAGE

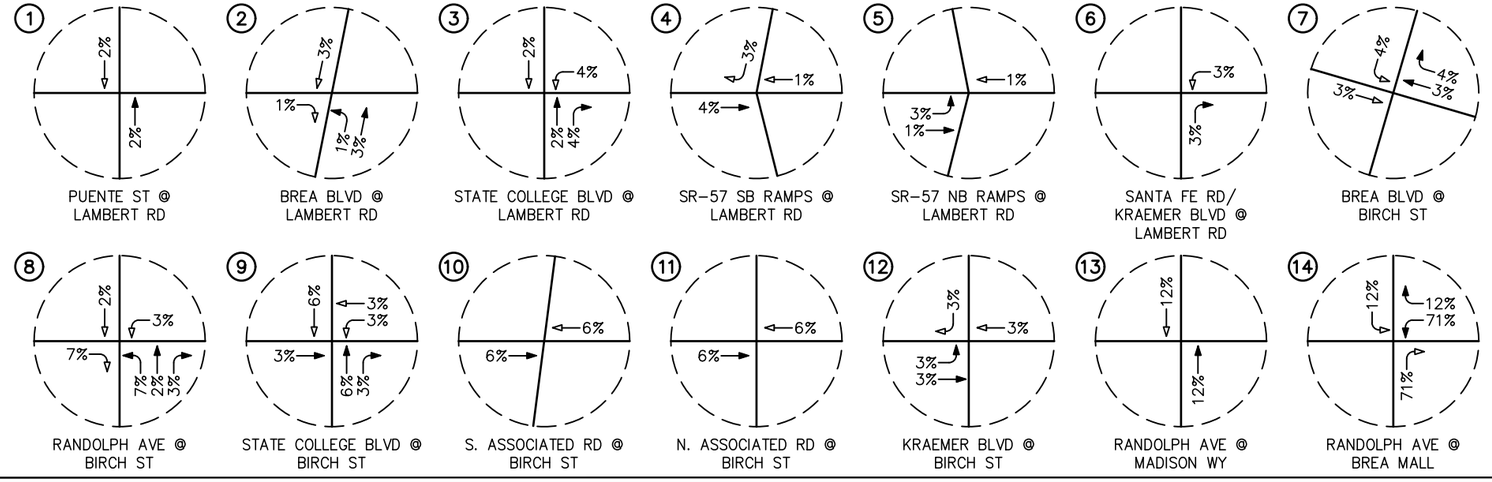
= PROJECT SITE

FIGURE 5-1B

PROJECT TRIP DISTRIBUTION – COMMERCIAL

BREA MALL MIXED-USE PROJECT, BREA





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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

(#) = STUDY INTERSECTION BASED ON PRIOR BREA MALL STUDY

(#) = RECOMMENDED STUDY INTERSECTION

= INBOUND PERCENTAGE

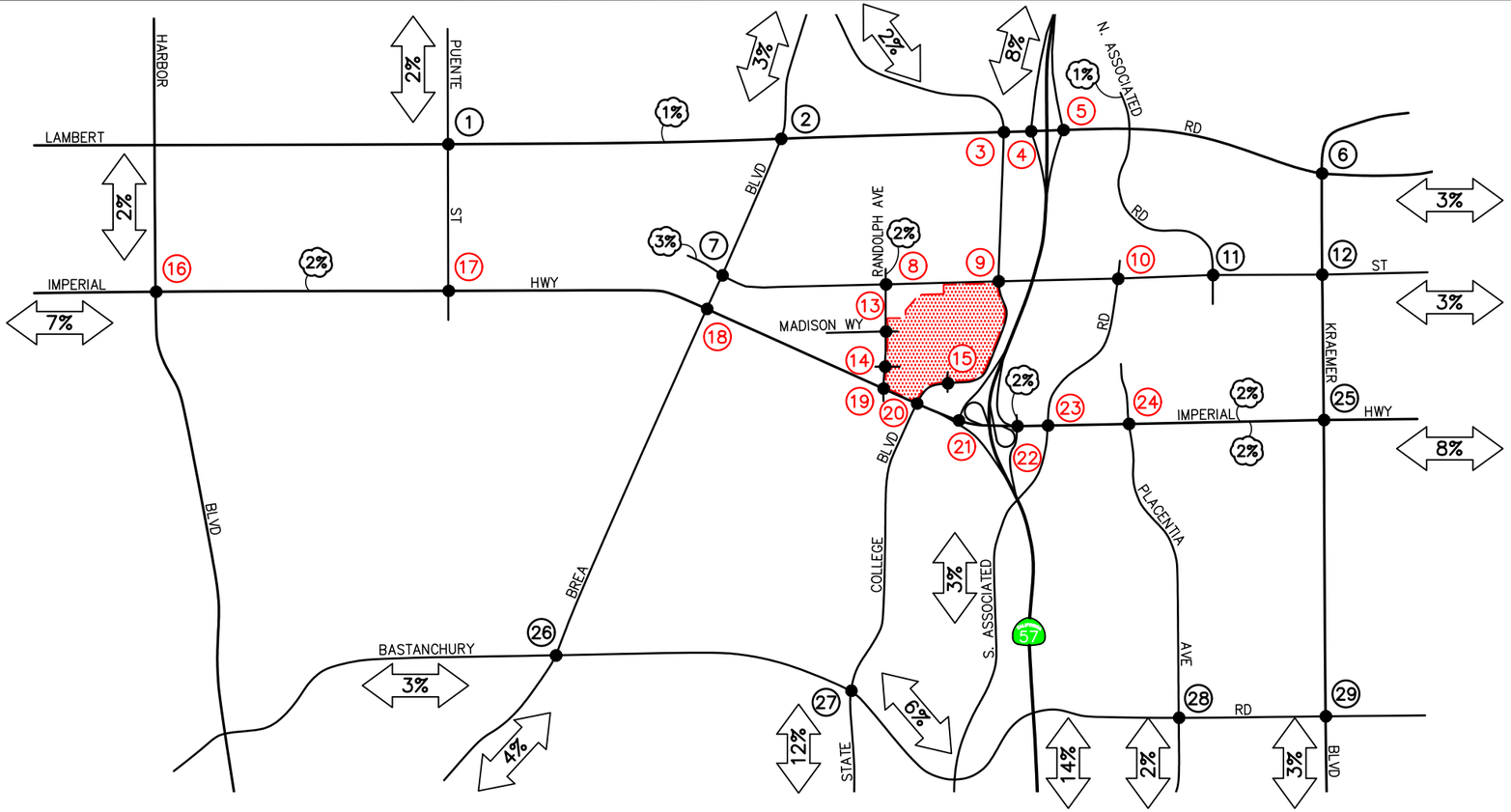
= OUTBOUND PERCENTAGE

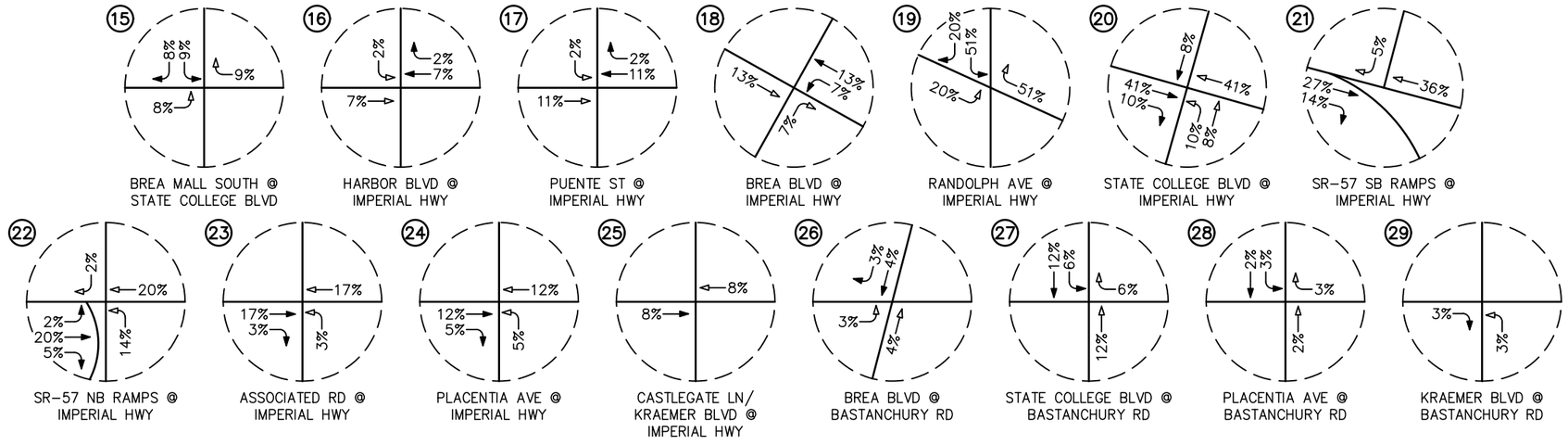
= PROJECT SITE

FIGURE 5-2A

PROJECT TRIP DISTRIBUTION – RESIDENTIAL

BREA MALL MIXED-USE PROJECT, BREA





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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

(#) = STUDY INTERSECTION BASED ON PRIOR BREA MALL STUDY

(#) = RECOMMENDED STUDY INTERSECTION

⟵ = INBOUND PERCENTAGE

⟵ = OUTBOUND PERCENTAGE

▭ = PROJECT SITE

FIGURE 5-2B

PROJECT TRIP DISTRIBUTION – RESIDENTIAL

BREA MALL MIXED-USE PROJECT, BREA

TABLE 2-1

PROJECT DEVELOPMENT SUMMARY

Land Use/Project Description	Development Totals
Existing Occupied Brea Mall:	
▪ Existing Occupied Mall	1,210,438 SF GLA
Existing Occupied Brea Mall + Vacancy:	
▪ Existing Occupied Mall	1,210,438 SF GLA
▪ Vacant Second Story Sears Tenant	80,995 SF GLA
Fully Occupied Brea Mall	*1,291,433 SF GLA*
Existing Occupied Brea Mall + Proposed Project:	
▪ Existing Occupied Mall	1,210,438 SF GLA
▪ Existing Occupied Mall to be Demolished	-80,995 SF GLA
▪ Proposed Project Commercial[3]	
o Sporting Goods	50,000 SF GLA
o Fitness Center	128,000 SF GLA
o Non-Anchor Mall Retail	69,415 SF GLA
Existing Occupied Brea Mall + Proposed Project Subtotal	*1,376,858 SF GLA*
▪ Proposed Project Multifamily Homes[4]	
o Studio	28 Units
o 1 Bedroom	215 Units
o 2 Bedroom	140 Units
Proposed Residential	*383 Units*

[3] *Table 3-2 Brea Mall Mixed Use Project Land Use Summary,* received December 2, 2021.
[4] *Table 3-3A Residential Building A Summary,* received December 2, 2021.

TABLE 5-1
PROJECT TRAFFIC GENERATION RATES AND FORECAST[5]

ITE Land Use Code/ Project Description	Weekday							Saturday			
	Daily	AM Peak Hour			PM Peak Hour			Daily	MD Peak Hour		
	2-Way	Enter	Exit	Total	Enter	Exit	Total	2-Way	Enter	Exit	Total
Trip Generation Factors:											
• 221: Multifamily Housing (Mid-Rise) (TE/DU)[6]	5.44	26%	74%	0.36	61%	39%	0.44	4.91	49%	51%	0.44
• 820: Shopping Center (TE/TSF GLA)	Eq.[7]	62%	38%	Eq.[7]	48%	52%	Eq.[7]	Eq.[7]	52%	48%	Eq.[7]
• Health Club (TE/TSF)[8]	27.44	1.02	0.51	1.53	1.85	0.97	2.83	26.35	1.04	1.79	2.83
[A] Existing Occupied Brea Mall:											
• Existing Shopping Center (1,210,438 SF)	32,766	469	288	757	1,651	1,788	3,439	41,824	2,308	2,130	4,438
Pass-by Reduction[9]	-3,277	-23	-15	-38	-165	-179	-344	-4,182	-231	-213	-444
Existing Occupied Brea Mall Subtotal	***29,489***	***446***	***273***	***719***	***1,486***	***1,609***	***3,095***	***37,642***	***2,077***	***1,917***	***3,994***
[B] Existing Occupied Brea Mall + Vacancy:											
• Fully Occupied Shopping Center (1,291,433 SF)[10]	34,241	494	303	797	1,732	1,876	3,608	43,537	2,429	2,242	4,671
Pass-by Reduction[9]	-3,424	-25	-15	-40	-173	-188	-361	-4,354	-243	-224	-467
Fully Occupied Brea Mall Total	***30,817***	***469***	***288***	***757***	***1,559***	***1,688***	***3,247***	***39,183***	***2,186***	***2,018***	***4,204***
[C] Existing Occupied Brea Mall + Proposed Project:											
• Proposed Shopping Center (1,248,858 SF)[11]	33,469	481	295	776	1,690	1,830	3,520	42,642	2,365	2,184	4,549
Internal Capture[12]	-917	-1	-1	-2	-28	-47	-75	-827	-36	-38	-74
Proposed Shopping Center Subtotal	*32,552*	*480*	*294*	*774*	*1,662*	*1,783*	*3,445*	*41,815*	*2,329*	*2,146*	*4,475*
Pass-by Reduction[9]	-3,255	-24	-15	-39	-166	-179	-345	-4,182	-233	-215	-448
Proposed Shopping Center Subtotal	*29,297*	*456*	*279*	*735*	*1,496*	*1,604*	*3,100*	*37,633*	*2,096*	*1,931*	*4,027*
• Proposed Health Club (128,000 SF)	3,512	131	65	196	237	125	362	3,373	133	229	362
• Proposed Residential (383 DU)	2,084	36	102	138	103	66	169	1,881	83	86	169
Internal Capture[12]	-917	-1	-1	-2	-47	-28	-75	-827	-38	-36	-74
Proposed Residential Subtotal	*1,167*	*35*	*101*	*136*	*56*	*38*	*94*	*1,054*	*45*	*50*	*95*
[C] Existing Occupied Brea Mall + Proposed Project Total	***33,976***	***622***	***445***	***1,067***	***1,789***	***1,767***	***3,556***	***42,060***	***2,274***	***2,210***	***4,484***
[D] Net Trip Generation [C] (Existing Occupied Brea Mall + Proposed Project) – [B] (Existing Occupied Brea Mall + Vacancy)	**3,159**	**153**	**157**	**310**	**230**	**79**	**309**	**2,877**	**88**	**192**	**280**

Notes:
TE/DU = Trip End per Dwelling Unit
TE/TSF GLA = Trip End per Thousand Square Feet Gross Leasable Area
TE/TSF = Trip End per Thousand Square Feet

5 Source: *Trip Generation*, 10th Edition, Institute of Transportation Engineers (ITE), Washington, D.C. (2017).

6 Mid-Rise Multifamily Housing consists of buildings that are between 3 and 10 levels.

7 Trip Generation rates based on the following equations:
- Weekday Daily: Ln(T) = 0.68Ln(X) + 5.57
- Weekday AM Peak Hour: T = 0.50(X) + 151.78
- Weekday PM Peak Hour: Ln(T) = 0.74Ln(X) + 2.89
- Saturday Daily: Ln(T) = 0.62Ln(X) + 6.24
- Saturday Peak Hour of Generator: Ln(T) = 0.79Ln(X) + 2.79

8 Source: *Northshore Mall Redevelopment Traffic Impact and Access Study,* prepared by vhb, dated April 2018. As there is no Sunday Daily and Sunday Midday peak hour empirical rates available, Saturday Daily and Saturday Midday peak hour empirical rates have been applied.

9 The pass-by trip reductions applied to retail trips are 10% for Weekday Daily, 5% for Weekday AM peak hour, 10% for Weekday PM peak hour, 10% for Saturday Daily, 10% for Saturday Midday peak hour, 10% for Sunday Daily, and 10% for Sunday Midday peak hour.

10 The fully occupied Brea Mall includes the existing 1,210,438 SF of occupied mall and 80,995 SF of second floor Sears vacancy.

11 The proposed Brea Mall includes the existing 1,210,438 SF of occupied mall, 80,995 SF of the occupied first floor of the Sears building to be demolished, and 119,415 SF of additional commercial.

12 Consistent with the *Trip Generation Handbook,* published by ITE (2017), Project trip generation was adjusted to account for internal capture between the retail and residential components of the Project. As there is no Saturday or Sunday internal capture worksheets available, Weekday Daily and Weekday PM peak hour calculations have been applied to Saturday Daily, Saturday Midday peak hour, Sunday Daily, and Sunday Midday peak hour.

TABLE 6-1

LOCATION AND DESCRIPTION OF CUMULATIVE PROJECTS[13]

No.	Description	Location/Address	Size
City of Brea			
1.	CVS	390 N. Brea Boulevard	13,000 SF Pharmacy with Drive-Through, 1,700 SF Coffee Shop with Drive-through
2.	Brea Place	State College Boulevard at Birch Street	653 DU Apartments, 5,000 SF Office, 150 Room Hotel[14]
3.	Downtown Hotel	220 S. Brea Boulevard	116 Room Hotel, 4,000 SF High Turnover Sit Down Restaurant
4.	Mercury Apartments	Southeast corner of Berry Street at Mercury Lane	120 DU Apartments
5.	Brea 265 Specific Plan[15]	South of Lambert Road/Carbon Canyon Road, north of Rose Drive, east of Valencia Avenue and west of Carbon Canyon Regional Park	1,100 residential units, consisting of 450 single-family homes and 650 multi-family residential units, and a 13-acre sports park
6.	Brea Plaza	409-477 S. Associated Road and 1555, 1609, 1623, 1643 E. Imperial Highway	Demolition of an existing 18,450 SF movie theater and the construction of a mixed-use development with 21,355 SF of office space and 229[16] apartment units
7.	Central Park Village	340-420 W. Central Avenue	62 DU townhomes and 20 DU apartments[17]
8.	New Industrial Building	201 N. Berry Street	109,125 SF warehouse
9.	Alvero Assisted Living	251 S. Randolph Avenue	80 rooms with 82 beds residential care facility
10.	Extra Space Self Storage	2700 E. Imperial Highway	126,546 self-storage facility
11.	Brea Imperial Center	391 S. State College Boulevard	5,000 SF restaurant, 2,300 SF bagel/coffee shop, 1,600 SF café, 3,867 SF In-N-Out, 28,145 SF retail, and 4,400 SF bank to replace existing land uses which include 4,050 SF food uses, 24,481 SF retail, 4,400 SF bank, 2,325 SF medical office, 10,074 SF health studio spa.
12.	Transwestern	285 S. Berry Street and 711 W. Imperial Highway	126,797 SF warehouse
13.	The Phoenix Club	375 W. Central Avenue	8,350 SF restaurant with banquet hall
14.	Aldi Grocery Store	2395 E. Imperial Highway	21,106 SF grocery store
15.	Starbucks with Drive-Thru	2 Pointe Drive	2,400 SF coffee shop with drive-thru
16.	Lambert Road Condos	700-800 W. Lambert Road	24 DU condominiums

13 Source: City of Brea, Fullerton, and Chino Hills Planning Departments.

14 The traffic impact analysis conservatively evaluated 790 units as originally planned, which would result in higher traffic volumes in the cumulative scenarios.

15 Brea 265 Specific Plan Project has been included as a related project as part of Year 2045 background traffic conditions.

16 Fifteen (15) of the proposed apartments are considered co-living units, which include five (5) 3-bedroom units and ten (10) four-bedroom units, therefore, to provide a conservative assessment, the co-living unit bedrooms have been counted as individual units for a total apartment count of 229 units.

17 The project has already built and occupied 206 DU apartments and 83 DU townhomes.

TABLE 6-1(CONTINUED)
LOCATION AND DESCRIPTION OF CUMULATIVE PROJECTS[18]

No.	Description	Location/Address	Size
City of Brea (Continued)			
17.	Brea Metro Office Condos	330 E. Lambert Road	33 DU condominiums
18.	Father's House	245 W. Birch Street	299 seat religious assembly
19.	Cha Cha's Expansion	110 W. Birch Street	Existing restaurant expansion of 2,710 SF
20.	Western Realco	2929 E. Imperial Highway	131,500 SF industrial building
21.	CAMP Transformation	910 E. Birch Street, Suite 250	4,100 SF Fitness Center
22.	Brea Express Wash	300 S. Brea Boulevard	4,254 SF express car wash
23.	Raising Cane's	255 E. Imperial Highway	Demolish existing 9,588 SF office building and construction of a 4,047 SF fast food restaurant with drive-through
City of Fullerton			
24.	3105 Yorba Linda Boulevard	3105 Yorba Linda Boulevard	4,840 SF drive-through car wash
25.	Beckman Business Center	4300 North Harbor Boulevard	522,250 SF Warehousing, 166,185 SF General Light Industrial, 105,880 SF Manufacturing, 42,000 SF Office, and 142,350 SF fulfillment center
City of Chino Hills			
26.	Woodbridge Pacific Group (Canyon Hills/Hillcrest)	Northwest of Carbon Canyon Road and west of Canyon Hills Road	38 DU Single Family Detached
27.	Stonefield Development	Northwest of Carbon Canyon Road and east of Fairway Drive	28 DU single-family
28.	Morningfield Estates and Loving Savior of the Hills Lutheran Church and School Master Plan Addendum	South of Morningfield Drive, west of Peyton Drive, north of Chino Hills Parkway, adjacent to San Bernardino County Flood Channel	7-Lot Subdivision with semi-custom single-family homes, plus 3 classrooms/71 student addition to the Lutheran School
29.	Coptic Orthodox Church	East side of Peyton Drive, north of the Chino Creek Drainage Channel and south of the Chino Valley Community Church property	14,695 SF multi-purpose room, 8,645 SF Sanctuary and 555 SF Bookstore
30.	Buddhist Temple of Chino Hills	Northeast of Chino Hills Parkway and Rustic Drive	23,400 SF Buddhist temple expansion
31.	Hidden Oaks	East of Carbon Canyon Road at Canyon Hills Road	53 DU Single Family
32.	Paradise Ranch	East of Canyon Hills Road and south of Esquilime Drive	51 DU single-family

18 Source: City of Brea, Fullerton, and Chino Hills Planning Departments.

APPENDIX B

EXISTING TRAFFIC COUNT DATA

APPENDIX B-I

EXISTING INTERSECTION TRAFFIC COUNT DATA

National Data & Surveying Services

Intersection Turning Movement Count

Location: N State College Blvd & E Lambert Rd
City: Brea
Control: Signalized

Project ID: 19-01101-003
Date: 5/22/2019

Total

NS/EW Streets:	N State College Blvd				N State College Blvd				E Lambert Rd				E Lambert Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	1.5	1.5	0	2	2	0	0	2	3.5	0.5	0	2	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	12	28	19	0	131	119	0	0	1	228	41	0	79	257	75	0	990
7:15 AM	16	22	32	0	158	146	0	0	4	235	38	1	102	344	99	1	1198
7:30 AM	17	24	22	0	158	144	0	0	0	258	59	0	92	369	114	1	1258
7:45 AM	32	36	29	0	192	162	1	0	2	291	64	0	116	391	105	2	1423
8:00 AM	47	47	29	0	210	109	3	0	1	272	46	0	102	355	124	1	1346
8:15 AM	37	53	34	0	201	148	2	0	3	305	48	0	101	378	141	0	1451
8:30 AM	28	47	34	0	221	134	2	0	7	294	29	0	87	323	139	0	1345
8:45 AM	13	21	25	0	183	122	1	0	1	262	37	0	118	343	139	0	1265
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	202	278	224	0	1454	1084	9	0	19	2145	362	1	797	2760	936	5	10276
APPROACH %'s :	28.69%	39.49%	31.82%	0.00%	57.09%	42.56%	0.35%	0.00%	0.75%	84.88%	14.33%	0.04%	17.72%	61.36%	20.81%	0.11%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	144	183	126	0	824	553	8	0	13	1162	187	0	406	1447	509	3	5565
PEAK HR FACTOR :	0.766	0.863	0.926	0.000	0.932	0.853	0.667	0.000	0.464	0.952	0.730	0.000	0.875	0.925	0.902	0.375	0.959
	0.913				0.970				0.954				0.954				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	1.5	1.5	0	2	2	0	0	2	3.5	0.5	0	2	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	62	117	64	0	108	65	0	0	2	307	34	2	56	270	213	4	1304
4:15 PM	59	152	67	0	115	57	3	0	2	278	48	1	58	279	180	7	1306
4:30 PM	66	123	74	0	131	67	0	0	1	264	53	0	71	297	178	4	1329
4:45 PM	75	162	44	0	110	84	3	0	6	196	52	0	68	298	170	0	1268
5:00 PM	55	142	49	0	114	82	3	0	14	198	58	0	83	231	154	5	1188
5:15 PM	84	131	50	0	148	89	3	0	11	334	60	0	60	243	158	3	1374
5:30 PM	71	141	66	0	122	87	4	0	5	312	64	0	78	241	163	1	1355
5:45 PM	78	133	72	0	135	94	4	0	6	242	51	0	66	245	178	1	1305
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	550	1101	486	0	983	625	20	0	47	2131	420	3	540	2104	1394	25	10429
APPROACH %'s :	25.74%	51.52%	22.74%	0.00%	60.38%	38.39%	1.23%	0.00%	1.81%	81.93%	16.15%	0.12%	13.29%	51.78%	34.31%	0.62%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	288	547	237	0	519	352	14	0	36	1086	233	0	287	960	653	10	5222
PEAK HR FACTOR :	0.857	0.963	0.823	0.000	0.877	0.936	0.875	0.000	0.643	0.813	0.910	0.000	0.864	0.980	0.917	0.500	0.950
	0.947				0.922				0.836				0.974				

Prepared by National Data & Surveying Services

N State College Blvd & E Lambert Rd

Peak Hour Turning Movement Count

ID: 19-01101-003
City: Brea

Day: Wednesday
Date: 05/22/2019

PEAK HOURS	COUNT PERIODS
07:45 AM - 08:45 AM	07:00 AM - 09:00 AM
NONE	NONE
05:00 PM - 06:00 PM	04:00 PM - 06:00 PM

N State College Blvd — SOUTHBOUND

AM	8	553	824	0	705	AM
NOON	0	0	0	0	0	NOON
PM	14	352	519	0	1236	PM
	0	2	2	0		

E Lambert Rd — EASTBOUND

AM	NOON	PM		
1599	0	1262		
0	0	0	0	
13	0	36	2	
1162	0	1086	3.5	
187	0	233	0.5	
AM	NOON	PM		

CONTROL

Signalized

TEV	5565	0	5222
	AM	NOON	PM
PHF	0.96		0.95

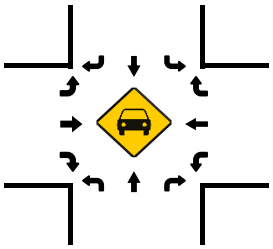
WESTBOUND — E Lambert Rd

PM	NOON	AM		
653	0	509	1	
960	0	1447	3	
287	0	406	2	
10	0	3	0	
1852	0	2115		
PM	NOON	AM		

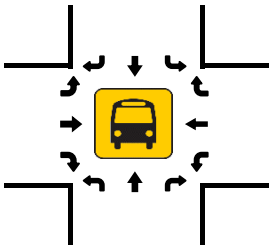
			0	2	1.5	1.5
PM	872	0	288	547	237	PM
NOON	0	0	0	0	0	NOON
AM	1146	0	144	183	126	AM

N State College Blvd — NORTHBOUND

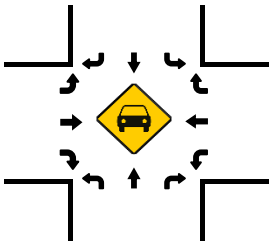
Total Vehicles (AM)



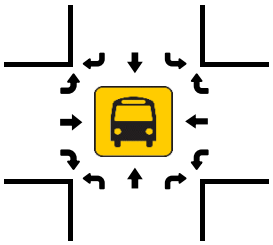
Total Vehicles (AM)



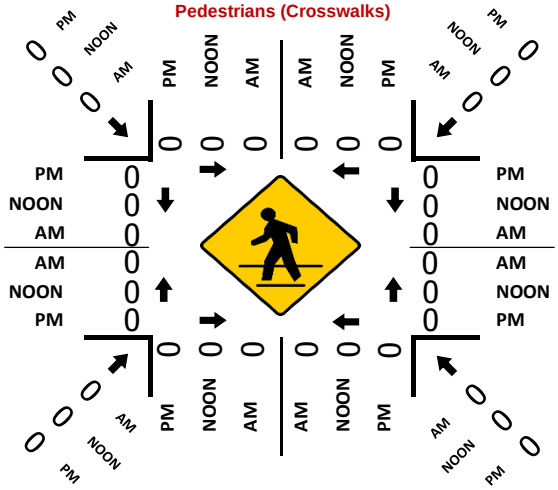
Total Vehicles (NOON)



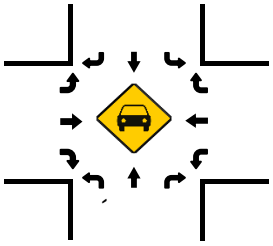
Total Vehicles (NOON)



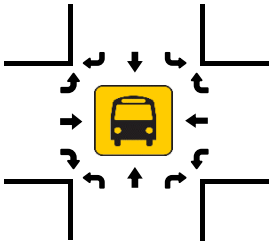
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: N State College Blvd & E Lambert Rd
City: Brea
Control: Signalized

Project ID: 19-01101-003
Date: 5/18/2019

Total

NS/EW Streets:	N State College Blvd				N State College Blvd				E Lambert Rd				E Lambert Rd				
NOON	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	1.5	1.5	0	2	2	0	0	2	3.5	0.5	0	2	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
11:00 AM	27	46	46	0	127	65	2	0	3	198	27	1	101	244	140	4	1031
11:15 AM	22	57	69	0	125	65	0	0	6	202	45	0	113	275	139	0	1118
11:30 AM	25	62	75	0	161	86	1	0	1	208	37	0	104	292	142	2	1196
11:45 AM	29	54	65	0	119	89	2	0	3	185	45	0	111	341	137	0	1180
12:00 PM	26	59	55	0	105	81	0	0	3	217	64	0	138	352	154	1	1255
12:15 PM	31	60	90	0	122	87	2	0	4	212	54	0	144	303	148	1	1258
12:30 PM	28	60	76	0	106	73	2	0	6	275	73	0	150	335	171	2	1357
12:45 PM	37	54	76	0	139	91	1	0	4	220	56	0	175	280	183	2	1318
1:00 PM	29	51	66	0	142	76	1	0	4	228	53	0	115	257	163	0	1185
1:15 PM	33	69	84	0	108	73	2	0	2	265	49	0	101	248	148	3	1185
1:30 PM	23	58	95	0	116	75	3	0	4	236	54	1	104	274	157	1	1201
1:45 PM	22	76	84	0	140	84	2	0	6	238	51	0	122	293	173	2	1293
2:00 PM	32	62	88	0	128	60	1	0	2	246	34	0	107	296	164	1	1221
2:15 PM	38	62	84	0	127	61	6	0	3	180	41	0	117	301	161	4	1185
2:30 PM	35	64	100	0	131	62	3	0	2	236	42	0	107	333	158	1	1274
2:45 PM	29	59	91	0	124	84	0	0	6	250	52	0	131	283	176	0	1285
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	466	953	1244	0	2020	1212	28	0	59	3596	777	2	1940	4707	2514	24	19542
APPROACH %'s :	17.50%	35.79%	46.71%	0.00%	61.96%	37.18%	0.86%	0.00%	1.33%	81.10%	17.52%	0.05%	21.12%	51.25%	27.37%	0.26%	
PEAK HR :	12:00 PM - 01:00 PM																TOTAL
PEAK HR VOL :	122	233	297	0	472	332	5	0	17	924	247	0	607	1270	656	6	5188
PEAK HR FACTOR :	0.824	0.971	0.825	0.000	0.849	0.912	0.625	0.000	0.708	0.840	0.846	0.000	0.867	0.902	0.896	0.750	0.956
	0.901				0.876				0.839				0.965				

Prepared by National Data & Surveying Services

N State College Blvd & E Lambert Rd

Peak Hour Turning Movement Count

ID: 19-01101-003
City: Brea

Day: Saturday
Date: 05/18/2019

PEAK HOURS	COUNT PERIODS
NONE	NONE
12:00 PM - 01:00 PM	11:00 AM - 03:00 PM
NONE	NONE

N State College Blvd — SOUTHBOUND

AM	0	0	0	0	0	AM
NOON	5	332	472	0	906	NOON
PM	0	0	0	0	0	PM

E Lambert Rd — EASTBOUND

AM	NOON	PM		
0	1397	0		
0	0	0	0	
0	17	0	2	
0	924	0	3.5	
0	247	0	0.5	
AM	NOON	PM		

E Lambert Rd — WESTBOUND

PM	NOON	AM	
0	656	0	1
0	1270	0	3
0	607	0	2
0	6	0	0
0	1699	0	
PM	NOON	AM	

N State College Blvd — NORTHBOUND

PM	0	0	0	0	0	PM
NOON	1186	0	122	233	297	NOON
AM	0	0	0	0	0	AM

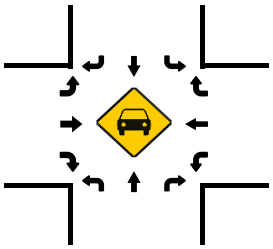
0	2	2	0

0	2	1.5	1.5

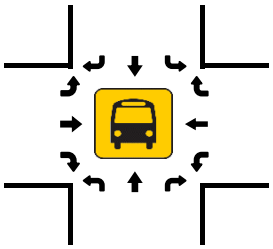
CONTROL: Signalized

	AM	NOON	PM
TEV	0	5188	0
PHF		0.96	

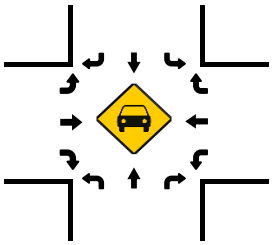
Total Vehicles (AM)



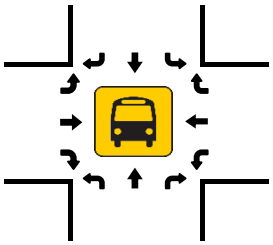
Total Vehicles (AM)



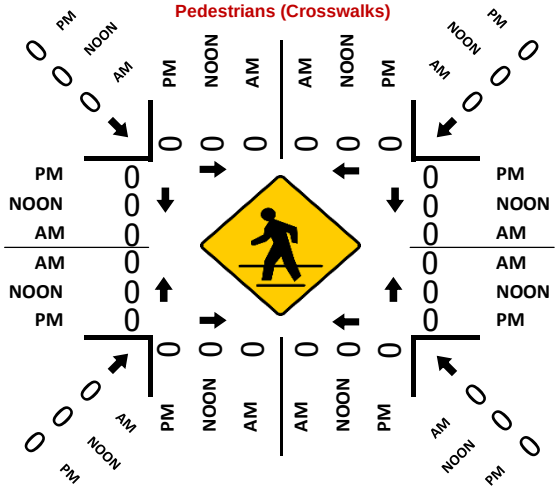
Total Vehicles (NOON)



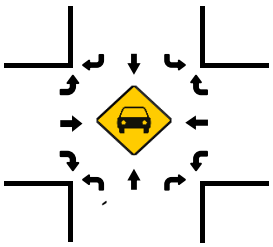
Total Vehicles (NOON)



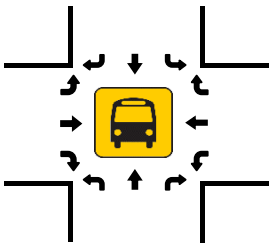
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: SR-57 SB Ramps & E Lambert Rd
City: Brea
Control: Signalized

Project ID: 19-01101-004
Date: 5/22/2019

Total

NS/EW Streets:	SR-57 SB Ramps				SR-57 SB Ramps				E Lambert Rd				E Lambert Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	1.5	0	1.5	0	0	2.5	1.5	0	2	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	230	1	125	0	0	241	132	0	33	308	0	0	1070
7:15 AM	0	0	0	0	267	0	149	0	0	312	128	0	36	385	0	0	1277
7:30 AM	0	0	0	0	270	0	150	0	0	296	129	0	58	413	0	0	1316
7:45 AM	0	0	0	0	288	0	136	0	0	375	126	0	38	485	0	1	1449
8:00 AM	0	0	0	0	223	0	116	0	0	404	120	0	53	476	0	1	1393
8:15 AM	0	0	0	0	257	0	121	0	0	397	132	0	59	522	0	0	1488
8:30 AM	0	0	0	0	209	1	115	0	0	403	160	0	54	446	0	1	1389
8:45 AM	0	0	0	0	235	0	149	0	0	345	136	0	64	458	0	1	1388
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	1979	2	1061	0	0	2773	1063	0	395	3493	0	4	10770
APPROACH %'s :					65.06%	0.07%	34.88%	0.00%	0.00%	72.29%	27.71%	0.00%	10.15%	89.75%	0.00%	0.10%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	977	1	488	0	0	1579	538	0	204	1929	0	3	5719
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.848	0.250	0.897	0.000	0.000	0.977	0.841	0.000	0.864	0.924	0.000	0.750	0.961
					0.864				0.940				0.919				

NS/EW Streets:	SR-57 SB Ramps				SR-57 SB Ramps				E Lambert Rd				E Lambert Rd				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	1.5	0	1.5	0	0	2.5	1.5	0	2	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	116	1	143	0	0	292	209	0	52	391	0	1	1205
4:15 PM	0	0	0	0	114	1	172	0	0	301	151	0	45	362	0	2	1148
4:30 PM	0	0	0	0	92	1	183	0	0	256	195	0	63	372	0	0	1162
4:45 PM	0	0	0	0	100	1	164	0	0	209	155	0	52	406	0	0	1087
5:00 PM	0	0	0	0	100	6	165	0	0	172	185	0	85	292	0	0	1005
5:15 PM	0	0	0	0	150	2	149	0	0	359	200	0	70	322	0	1	1253
5:30 PM	0	0	0	0	144	1	168	0	0	322	172	0	55	325	0	0	1187
5:45 PM	0	0	0	0	98	0	151	0	0	314	148	0	60	358	0	0	1129
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	914	13	1295	0	0	2225	1415	0	482	2828	0	4	9176
APPROACH %'s :					41.13%	0.59%	58.28%	0.00%	0.00%	61.13%	38.87%	0.00%	14.54%	85.33%	0.00%	0.12%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	422	4	662	0	0	1058	710	0	212	1531	0	3	4602
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.909	1.000	0.904	0.000	0.000	0.879	0.849	0.000	0.841	0.943	0.000	0.375	0.955
					0.948				0.882				0.953				

Prepared by National Data & Surveying Services

SR-57 SB Ramps & E Lambert Rd

Peak Hour Turning Movement Count

ID: 19-01101-004
City: Brea

Day: Wednesday
Date: 05/22/2019

PEAK HOURS

AM: 07:45 AM - 08:45 AM
NOON: NONE
PM: 04:00 PM - 05:00 PM

COUNT PERIODS

AM: 07:00 AM - 09:00 AM
NOON: NONE
PM: 04:00 PM - 06:00 PM

SR-57 SB Ramps — SOUTHBOUND

AM	488	1	977	0	0	AM
NOON	0	0	0	0	0	NOON
PM	662	4	422	0	0	PM
	1.5	0	1.5	0		

E Lambert Rd — EASTBOUND

AM	NOON	PM		
2417	0	2193		
0	0	0	0	
0	0	0	0	
1579	0	1058	2.5	
538	0	710	1.5	
AM	NOON	PM		

CONTROL

Signalized

TEV	5719	0	4602
	AM	NOON	PM
PHF	0.96		0.95

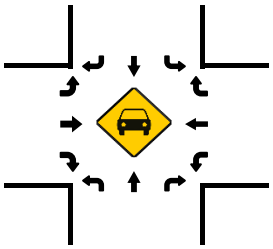
WESTBOUND — E Lambert Rd

PM	NOON	AM		
0	0	0	0	
1531	0	1929	3	
212	0	204	2	
3	0	3	0	
1483	0	2559		
PM	NOON	AM		

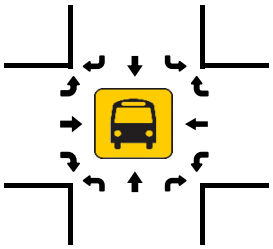
SR-57 SB Ramps — NORTHBOUND

	0	0	0	0		
PM	926	0	0	0	0	PM
NOON	0	0	0	0	0	NOON
AM	743	0	0	0	0	AM

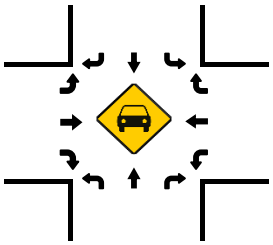
Total Vehicles (AM)



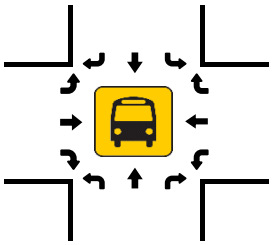
Total Vehicles (AM)



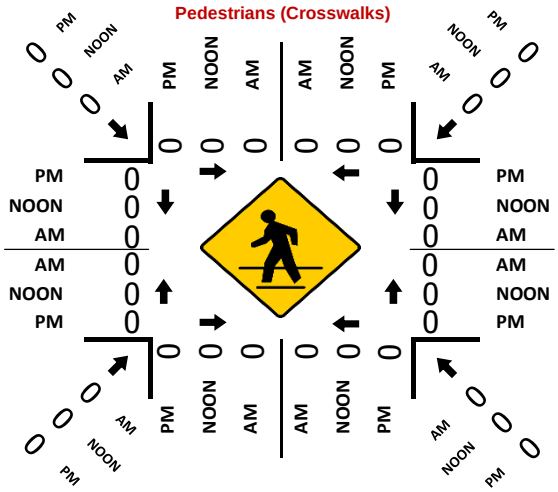
Total Vehicles (NOON)



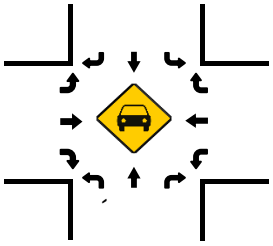
Total Vehicles (NOON)



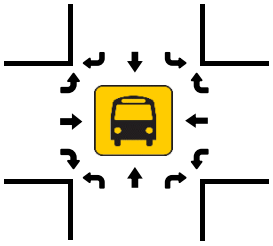
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: SR-57 SB Ramps & E Lambert Rd
City: Brea
Control: Signalized

Project ID: 19-01101-004
Date: 5/18/2019

Total

NS/EW Streets:	SR-57 SB Ramps				SR-57 SB Ramps				E Lambert Rd				E Lambert Rd				
NOON	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	1.5	0	1.5	0	0	2.5	1.5	0	2	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
11:00 AM	0	0	0	0	123	0	179	0	0	252	136	0	56	310	0	0	1056
11:15 AM	0	0	0	0	102	0	191	0	0	248	155	0	82	325	0	1	1104
11:30 AM	0	0	0	0	103	0	208	0	0	253	176	0	61	350	0	2	1153
11:45 AM	0	0	0	0	105	0	213	0	0	266	125	0	68	364	0	0	1141
12:00 PM	0	0	0	0	166	1	247	0	0	254	118	0	44	411	0	0	1241
12:15 PM	0	0	0	0	210	0	225	0	0	284	128	0	34	358	0	0	1239
12:30 PM	0	0	0	0	210	1	245	0	0	314	126	0	41	400	0	1	1338
12:45 PM	0	0	0	0	170	0	250	0	0	332	123	0	34	404	0	3	1316
1:00 PM	0	0	0	0	160	0	194	0	0	318	129	0	58	318	0	0	1177
1:15 PM	0	0	0	0	146	1	184	0	0	298	147	0	38	297	0	0	1111
1:30 PM	0	0	0	0	139	0	219	0	0	335	124	0	55	333	0	0	1205
1:45 PM	0	0	0	0	154	0	208	0	0	330	122	0	51	371	0	0	1236
2:00 PM	0	0	0	0	140	1	215	0	0	302	141	0	61	320	0	1	1181
2:15 PM	0	0	0	0	113	1	222	0	0	272	151	0	72	378	0	0	1209
2:30 PM	0	0	0	0	128	0	198	0	0	289	156	0	68	374	0	0	1213
2:45 PM	0	0	0	0	120	0	210	0	0	332	141	0	60	367	0	0	1230
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	2289	5	3408	0	0	4679	2198	0	883	5680	0	8	19150
APPROACH %'s :					40.14%	0.09%	59.77%	0.00%	0.00%	68.04%	31.96%	0.00%	13.44%	86.44%	0.00%	0.12%	
PEAK HR :	**12:00 PM - 01:00 PM**																TOTAL
PEAK HR VOL :	0	0	0	0	756	2	967	0	0	1184	495	0	153	1573	0	4	5134
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.900	0.500	0.967	0.000	0.000	0.892	0.967	0.000	0.869	0.957	0.000	0.333	0.959
							0.946				0.923				0.951		

Prepared by National Data & Surveying Services

SR-57 SB Ramps & E Lambert Rd

Peak Hour Turning Movement Count

ID: 19-01101-004
City: Brea

Day: Saturday
Date: 05/18/2019

PEAK HOURS	COUNT PERIODS
NONE	NONE
12:00 PM - 01:00 PM	11:00 AM - 03:00 PM
NONE	NONE

SR-57 SB Ramps — SOUTHBOUND

AM	0	0	0	0	0	AM
NOON	967	2	756	0	0	NOON
PM	0	0	0	0	0	PM

EASTBOUND — E Lambert Rd

AM	NOON	PM		
0	2540	0	⇦	
0	0	0	↶	0
0	0	0	↱	0
0	1184	0	→	2.5
0	495	0	↴	1.5
AM	NOON	PM		

WESTBOUND — E Lambert Rd

PM	NOON	AM		
0	0	0	↰	0
0	1573	0	←	3
0	153	0	↰	2
0	4	0	↶	0
	0	1944	0	⇨
PM	NOON	AM		

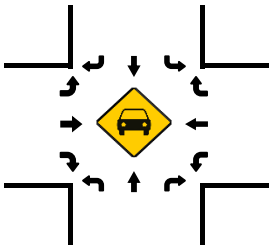
1.5	0	1.5	0	
0	0	0	0	

CONTROL			
Signalized			
TEV	0 AM	5134 NOON	0 PM
PHF		0.96	

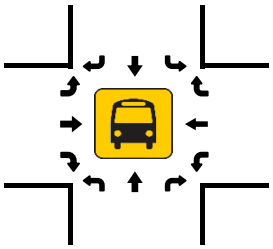
NORTHBOUND — SR-57 SB Ramps

PM	0	0	0	0	0	PM
NOON	650	0	0	0	0	NOON
AM	0	0	0	0	0	AM

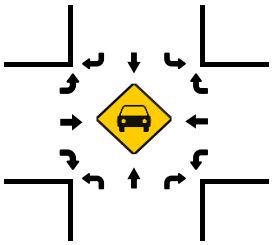
Total Vehicles (AM)



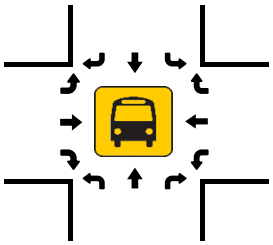
Total Vehicles (AM)



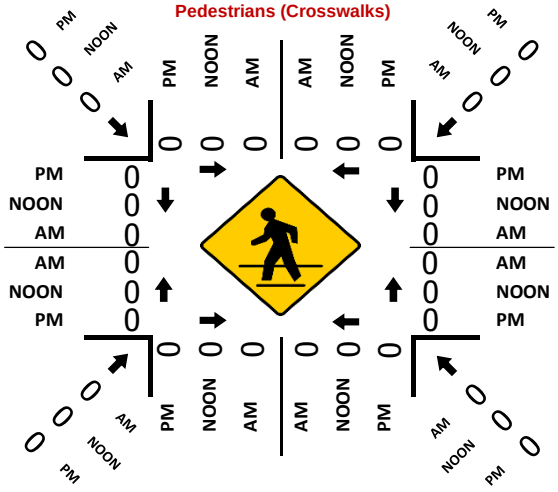
Total Vehicles (NOON)



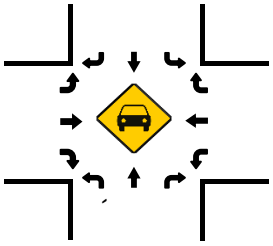
Total Vehicles (NOON)



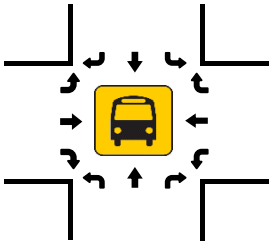
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: SR-57 NB Ramps & E Lambert Rd
City: Brea
Control: Signalized

Project ID: 19-01101-005
Date: 5/22/2019

Total

NS/EW Streets:	SR-57 NB Ramps				SR-57 NB Ramps				E Lambert Rd				E Lambert Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	0	1	0	0	0	0	0	2	3	0	0	0	2.5	1.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	189	0	88	0	0	0	0	0	72	409	0	0	0	143	124	0	1025
7:15 AM	265	0	100	0	0	0	0	0	75	497	0	1	0	169	118	0	1225
7:30 AM	243	0	93	0	0	0	0	0	60	520	0	1	0	220	128	0	1265
7:45 AM	276	0	124	0	0	0	0	0	58	596	0	2	0	253	111	0	1420
8:00 AM	231	0	115	0	0	0	0	0	53	588	0	1	0	305	108	0	1401
8:15 AM	236	0	106	0	0	0	0	0	86	557	0	0	0	337	124	0	1446
8:30 AM	227	1	114	0	0	0	0	0	62	544	0	0	0	282	109	0	1339
8:45 AM	239	0	124	0	0	0	0	0	66	528	0	0	0	287	113	0	1357
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1906	1	864	0	0	0	0	0	532	4239	0	5	0	1996	935	0	10478
APPROACH %'s :	68.78%	0.04%	31.18%	0.00%					11.14%	88.76%	0.00%	0.10%	0.00%	68.10%	31.90%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	970	1	459	0	0	0	0	0	259	2285	0	3	0	1177	452	0	5606
PEAK HR FACTOR :	0.879	0.250	0.925	0.000	0.000	0.000	0.000	0.000	0.753	0.958	0.000	0.375	0.000	0.873	0.911	0.000	0.969
	0.894								0.971				0.883				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	0	1	0	0	0	0	0	2	3	0	0	0	2.5	1.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	223	0	95	0	0	0	0	0	57	329	0	1	0	242	115	0	1062
4:15 PM	202	0	72	0	0	0	0	0	81	349	0	1	0	233	122	0	1060
4:30 PM	172	1	72	0	0	0	0	0	77	265	0	0	0	242	127	0	956
4:45 PM	176	1	69	0	0	0	0	0	57	232	0	0	0	253	121	0	909
5:00 PM	127	1	46	0	0	0	0	0	54	231	0	1	0	264	119	0	843
5:15 PM	141	0	63	0	0	0	0	0	85	411	0	0	0	247	125	0	1072
5:30 PM	176	1	78	0	0	0	0	0	95	363	0	0	0	222	112	0	1047
5:45 PM	162	1	61	0	0	0	0	0	101	333	0	0	0	240	131	0	1029
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1379	5	556	0	0	0	0	0	607	2513	0	3	0	1943	972	0	7978
APPROACH %'s :	71.08%	0.26%	28.66%	0.00%					19.44%	80.47%	0.00%	0.10%	0.00%	66.66%	33.34%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	606	3	248	0	0	0	0	0	335	1338	0	1	0	973	487	0	3991
PEAK HR FACTOR :	0.861	0.750	0.795	0.000	0.000	0.000	0.000	0.000	0.829	0.814	0.000	0.250	0.000	0.921	0.929	0.000	0.931
	0.840								0.844				0.953				

Prepared by National Data & Surveying Services

SR-57 NB Ramps & E Lambert Rd

Peak Hour Turning Movement Count

ID: 19-01101-005
City: Brea

Day: Wednesday
Date: 05/22/2019

PEAK HOURS	COUNT PERIODS
07:45 AM - 08:45 AM	07:00 AM - 09:00 AM
NONE	NONE
05:00 PM - 06:00 PM	04:00 PM - 06:00 PM

SR-57 NB Ramps — SOUTHBOUND

AM	0	0	0	0	712	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	825	PM

E Lambert Rd — EASTBOUND

AM	NOON	PM		
2150	0	1580	⇦	
3	0	1	↶	0
259	0	335	↱	2
2285	0	1338	→	3
0	0	0	↷	0

CONTROL

Signalized

TEV	5606 AM	0 NOON	3991 PM
PHF	0.97		0.93

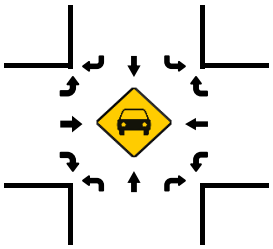
WESTBOUND — E Lambert Rd

	PM	NOON	AM	
1.5	487	0	452	↰
2.5	973	0	1177	←
0	0	0	0	↰
0	0	0	0	↶
⇨	1586	0	2744	

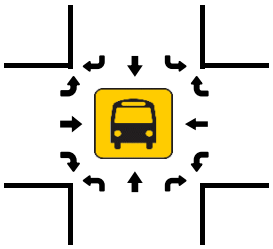
SR-57 NB Ramps — NORTHBOUND

PM	0	0	606	3	248	PM
NOON	0	0	0	0	0	NOON
AM	0	0	970	1	459	AM

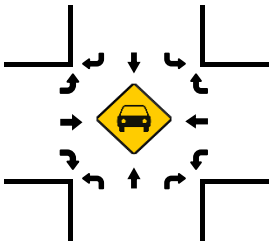
Total Vehicles (AM)



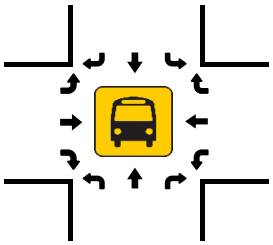
Total Vehicles (AM)



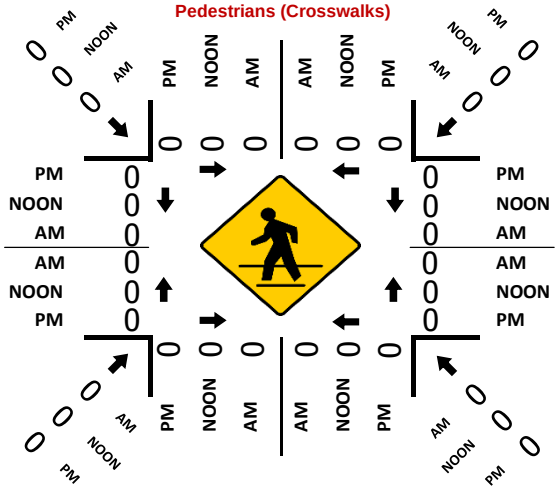
Total Vehicles (NOON)



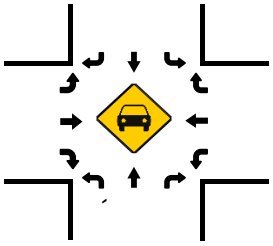
Total Vehicles (NOON)



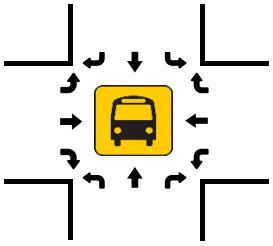
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: SR-57 NB Ramps & E Lambert Rd
City: Brea
Control: Signalized

Project ID: 19-01101-005
Date: 5/18/2019

Total

NS/EW Streets:	SR-57 NB Ramps				SR-57 NB Ramps				E Lambert Rd				E Lambert Rd				
NOON	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	0	1	0	0	0	0	0	2	3	0	0	0	2.5	1.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
11:00 AM	170	0	64	0	0	0	0	0	103	267	0	1	0	212	88	0	905
11:15 AM	210	2	86	0	0	0	0	0	109	246	0	1	0	171	95	0	920
11:30 AM	211	1	99	0	0	0	0	0	105	243	0	0	0	219	86	0	964
11:45 AM	209	0	93	0	0	0	0	0	119	257	0	2	0	231	91	0	1002
12:00 PM	248	0	97	0	0	0	0	0	99	324	0	0	0	196	83	0	1047
12:15 PM	232	1	107	0	0	0	0	0	107	377	0	0	0	170	102	0	1096
12:30 PM	252	0	99	0	0	0	0	0	145	390	0	1	0	194	106	0	1187
12:45 PM	250	0	98	0	0	0	0	0	157	345	0	1	0	188	89	0	1128
1:00 PM	191	0	82	0	0	0	0	0	150	332	0	0	0	178	76	0	1009
1:15 PM	181	0	105	0	0	0	0	0	153	302	0	0	0	167	91	0	999
1:30 PM	191	0	70	0	0	0	0	0	147	316	0	1	0	186	114	0	1025
1:45 PM	214	1	82	0	0	0	0	0	166	316	0	2	0	204	103	0	1088
2:00 PM	200	0	100	0	0	0	0	0	131	321	0	1	0	193	106	0	1052
2:15 PM	211	0	104	0	0	0	0	0	103	267	0	0	0	228	106	0	1019
2:30 PM	211	0	86	0	0	0	0	0	131	279	0	0	0	241	87	0	1035
2:45 PM	192	1	103	0	0	0	0	0	152	307	0	1	0	216	97	0	1069
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	3373	6	1475	0	0	0	0	0	2077	4889	0	11	0	3194	1520	0	16545
APPROACH %'s :	69.49%	0.12%	30.39%	0.00%					29.77%	70.07%	0.00%	0.16%	0.00%	67.76%	32.24%	0.00%	
PEAK HR :	12:00 PM - 01:00 PM																TOTAL
PEAK HR VOL :	982	1	401	0	0	0	0	0	508	1436	0	2	0	748	380	0	4458
PEAK HR FACTOR :	0.974	0.250	0.937	0.000	0.000	0.000	0.000	0.000	0.809	0.921	0.000	0.500	0.000	0.954	0.896	0.000	0.939
	0.986								0.908				0.940				

Prepared by National Data & Surveying Services

SR-57 NB Ramps & E Lambert Rd

Peak Hour Turning Movement Count

ID: 19-01101-005
City: Brea

Day: Saturday
Date: 05/18/2019

PEAK HOURS	COUNT PERIODS
NONE	NONE
12:00 PM - 01:00 PM	11:00 AM - 03:00 PM
NONE	NONE

SR-57 NB Ramps — SOUTHBOUND

AM	0	0	0	0	0	AM
NOON	0	0	0	0	889	NOON
PM	0	0	0	0	0	PM

E Lambert Rd — EASTBOUND

AM	NOON	PM		
0	1732	0		
0	2	0	0	
0	508	0	2	
0	1436	0	3	
0	0	0	0	
AM	NOON	PM		

E Lambert Rd — WESTBOUND

PM	NOON	AM	
0	380	0	1.5
0	748	0	2.5
0	0	0	0
0	0	0	0
0	1837	0	
PM	NOON	AM	

CONTROL

Signalized

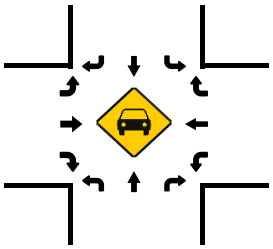
TEV	0 AM	4458 NOON	0 PM
PHF		0.94	

SR-57 NB Ramps — NORTHBOUND

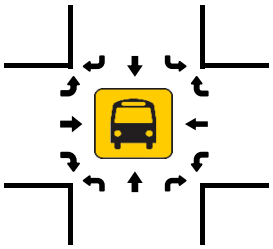
PM	0	0	0	0	0	PM
NOON	0	0	982	1	401	NOON
AM	0	0	0	0	0	AM

0 0 0 0 — 0 2 0 1

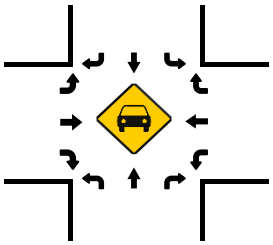
Total Vehicles (AM)



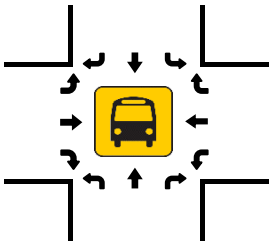
Total Vehicles (AM)



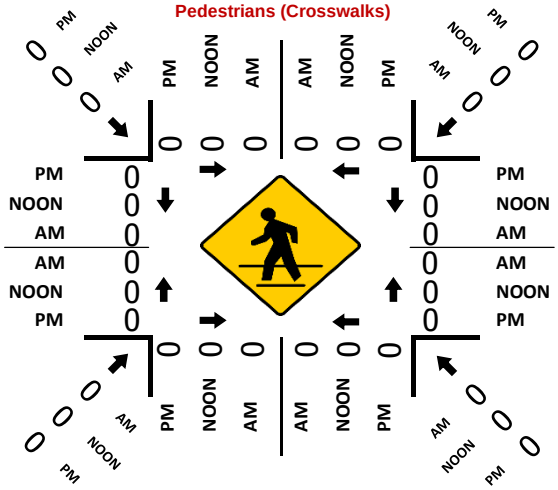
Total Vehicles (NOON)



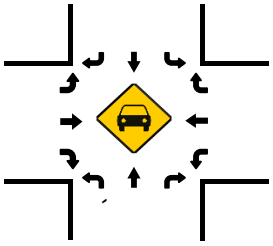
Total Vehicles (NOON)



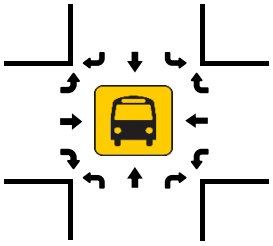
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Market Pl/S Randolph Ave & E Birch St
City: Brea
Control: Signalized

Project ID: 19-01101-008
Date: 5/22/2019

Total

NS/EW Streets:	Market Pl/S Randolph Ave				Market Pl/S Randolph Ave				E Birch St				E Birch St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	0	1	0.5	0.5	0	1	2	0	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	5	2	14	0	5	4	3	0	5	68	12	1	9	54	3	0	185
7:15 AM	3	3	16	0	5	5	7	0	5	95	22	0	11	77	4	0	253
7:30 AM	4	4	17	0	9	4	3	0	2	133	13	1	9	90	8	0	297
7:45 AM	6	7	23	0	10	5	6	0	6	170	21	0	15	127	12	0	408
8:00 AM	5	15	13	0	3	7	7	0	11	116	28	0	13	93	8	0	319
8:15 AM	4	6	18	0	15	12	5	0	7	110	18	1	13	129	12	1	351
8:30 AM	6	10	27	0	7	9	6	0	12	132	16	0	25	97	9	0	356
8:45 AM	7	11	17	0	6	6	6	0	15	115	15	0	22	112	7	1	340
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	40	58	145	0	60	52	43	0	63	939	145	3	117	779	63	2	2509
APPROACH %'s :	16.46%	23.87%	59.67%	0.00%	38.71%	33.55%	27.74%	0.00%	5.48%	81.65%	12.61%	0.26%	12.17%	81.06%	6.56%	0.21%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	21	38	81	0	35	33	24	0	36	528	83	1	66	446	41	1	1434
PEAK HR FACTOR :	0.875	0.633	0.750	0.000	0.583	0.688	0.857	0.000	0.750	0.776	0.741	0.250	0.660	0.864	0.854	0.250	0.879
	0.814				0.719				0.822				0.894				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	0	1	0.5	0.5	0	1	2	0	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	28	11	38	0	16	8	14	0	10	116	20	2	21	220	7	1	512
4:15 PM	23	15	24	0	11	11	18	0	15	118	19	0	32	199	13	1	499
4:30 PM	24	12	35	0	9	6	26	0	16	136	28	0	41	210	8	1	552
4:45 PM	33	7	35	0	17	7	21	0	16	122	32	0	20	187	8	4	509
5:00 PM	27	6	32	0	12	13	21	0	21	151	26	1	36	261	9	7	623
5:15 PM	32	19	37	0	18	14	30	0	13	145	24	1	53	248	9	1	644
5:30 PM	30	17	46	0	10	12	17	0	17	139	21	1	39	251	8	3	611
5:45 PM	29	11	39	0	8	7	33	0	18	144	13	1	32	225	10	3	573
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	226	98	286	0	101	78	180	0	126	1071	183	6	274	1801	72	21	4523
APPROACH %'s :	37.05%	16.07%	46.89%	0.00%	28.13%	21.73%	50.14%	0.00%	9.09%	77.27%	13.20%	0.43%	12.64%	83.07%	3.32%	0.97%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	118	53	154	0	48	46	101	0	69	579	84	4	160	985	36	14	2451
PEAK HR FACTOR :	0.922	0.697	0.837	0.000	0.667	0.821	0.765	0.000	0.821	0.959	0.808	1.000	0.755	0.943	0.900	0.500	0.951
	0.874				0.786				0.925				0.954				

Prepared by National Data & Surveying Services

Market Pl/S Randolph Ave & E Birch St

Peak Hour Turning Movement Count

ID: 19-01101-008
City: Brea

Day: Wednesday
Date: 05/22/2019

PEAK HOURS	COUNT PERIODS
07:45 AM - 08:45 AM	07:00 AM - 09:00 AM
NONE	NONE
05:00 PM - 06:00 PM	04:00 PM - 06:00 PM

Market Pl/S Randolph Ave — SOUTHBOUND

AM	24	33	35	0	115	AM
NOON	0	0	0	0	0	NOON
PM	101	46	48	0	158	PM
	0.5	0.5	1	0		

EASTBOUND — E Birch St

AM	NOON	PM	
492	0	1208	
1	0	4	0
36	0	69	1
528	0	579	2
83	0	84	0

CONTROL

Signalized

	AM	NOON	PM
TEV	1434	0	2451
PHF	0.88		0.95

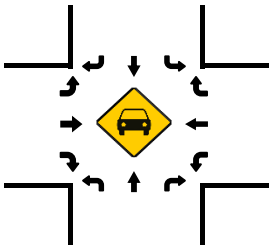
WESTBOUND — E Birch St

PM	NOON	AM	
36	0	41	1
985	0	446	2
160	0	66	1
14	0	1	0
795	0	645	

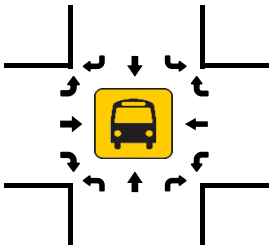
Market Pl/S Randolph Ave — NORTHBOUND

PM	290	0	118	53	154	PM
NOON	0	0	0	0	0	NOON
AM	182	0	21	38	81	AM
		0	1	1	1	

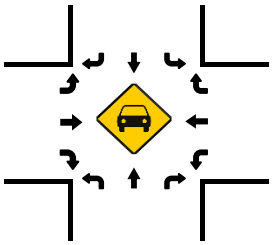
Total Vehicles (AM)



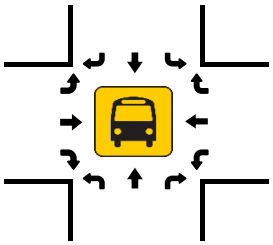
Total Vehicles (AM)



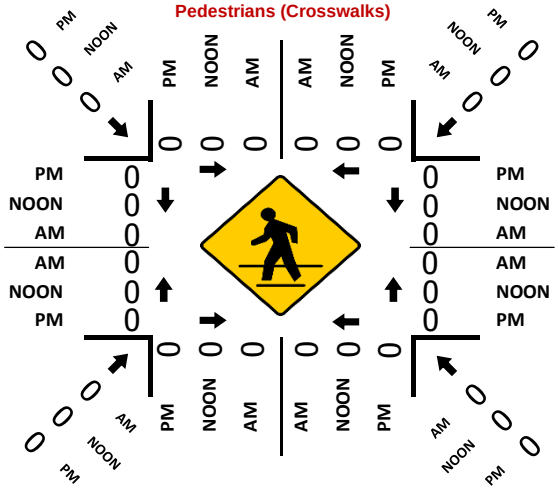
Total Vehicles (NOON)



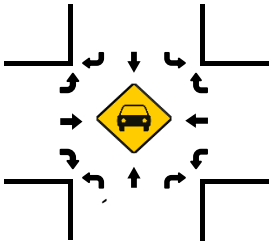
Total Vehicles (NOON)



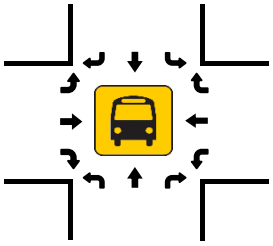
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Market Pl/S Randolph Ave & E Birch St
City: Brea
Control: Signalized

Project ID: 19-01101-008
Date: 5/18/2019

Total

NS/EW Streets:	Market Pl/S Randolph Ave				Market Pl/S Randolph Ave				E Birch St				E Birch St				
NOON	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	0	1	0.5	0.5	0	1	2	0	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
11:00 AM	20	13	42	0	10	10	18	0	17	104	22	2	35	116	9	0	418
11:15 AM	17	16	47	0	7	14	14	0	20	110	17	1	23	124	8	2	420
11:30 AM	18	12	47	0	9	7	17	0	17	113	26	0	32	131	13	3	445
11:45 AM	10	14	36	0	9	9	14	0	19	150	21	2	41	166	7	2	500
12:00 PM	29	15	51	0	12	10	12	0	18	115	24	0	47	164	5	1	503
12:15 PM	18	13	37	0	9	5	13	0	28	131	19	1	37	170	4	3	488
12:30 PM	21	22	34	0	14	6	18	0	14	158	21	2	28	177	4	1	520
12:45 PM	24	16	51	0	12	10	21	0	20	127	35	1	31	159	7	1	515
1:00 PM	21	19	38	0	16	14	21	0	15	121	33	1	37	170	9	1	516
1:15 PM	25	23	52	0	7	18	12	0	17	112	11	0	26	150	3	5	461
1:30 PM	19	17	43	0	14	12	15	0	14	134	17	1	29	159	3	2	479
1:45 PM	18	26	38	0	14	8	18	0	15	124	20	0	34	139	6	0	460
2:00 PM	21	16	38	0	5	14	12	0	9	121	27	0	22	142	7	0	434
2:15 PM	22	16	43	0	7	14	11	0	19	119	28	2	48	154	10	3	496
2:30 PM	29	21	54	0	9	5	20	0	12	100	21	0	23	147	6	0	447
2:45 PM	24	12	47	0	13	9	12	0	16	111	19	0	42	166	14	3	488
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	336	271	698	0	167	165	248	0	270	1950	361	13	535	2434	115	27	7590
APPROACH %'s :	25.75%	20.77%	53.49%	0.00%	28.79%	28.45%	42.76%	0.00%	10.41%	75.17%	13.92%	0.50%	17.20%	78.24%	3.70%	0.87%	
PEAK HR :	12:15 PM - 01:15 PM																TOTAL
PEAK HR VOL :	84	70	160	0	51	35	73	0	77	537	108	5	133	676	24	6	2039
PEAK HR FACTOR :	0.875	0.795	0.784	0.000	0.797	0.625	0.869	0.000	0.688	0.850	0.771	0.625	0.899	0.955	0.667	0.500	0.980
	0.863				0.779				0.932				0.967				

Prepared by National Data & Surveying Services

Market Pl/S Randolph Ave & E Birch St

Peak Hour Turning Movement Count

ID: 19-01101-008
City: Brea

Day: Saturday
Date: 05/18/2019

PEAK HOURS	COUNT PERIODS
NONE	NONE
12:15 PM - 01:15 PM	11:00 AM - 03:00 PM
NONE	NONE

CONTROL: Signalized

	AM	NOON	PM
TEV	0	2039	0
PHF		0.98	

SOUTHBOUND (Market Pl/S Randolph Ave)

	Left	Thru	Thru	Right	Total	
AM	0	0	0	0	0	AM
NOON	73	35	51	0	171	NOON
PM	0	0	0	0	0	PM

EASTBOUND (E Birch St)

	Left	Thru	Right	
AM	0	5	0	0
NOON	0	77	0	1
PM	0	537	0	2
	0	108	0	0
	AM	NOON	PM	

	AM	NOON	PM
	0	838	0

WESTBOUND (E Birch St)

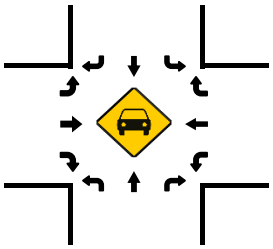
	Left	Thru	Right	
PM	0	24	0	1
NOON	0	676	0	2
AM	0	133	0	1
	0	6	0	0
	PM	NOON	AM	

	PM	NOON	AM
	0	754	0

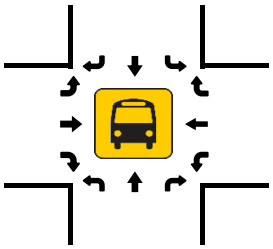
NORTHBOUND (Market Pl/S Randolph Ave)

	Left	Thru	Thru	Right	Total	
PM	0	0	0	0	0	PM
NOON	276	0	84	70	160	NOON
AM	0	0	0	0	0	AM

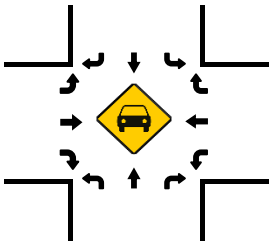
Total Vehicles (AM)



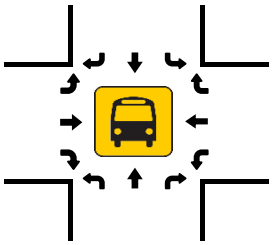
Total Vehicles (AM)



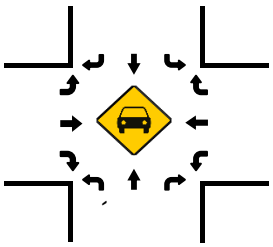
Total Vehicles (NOON)



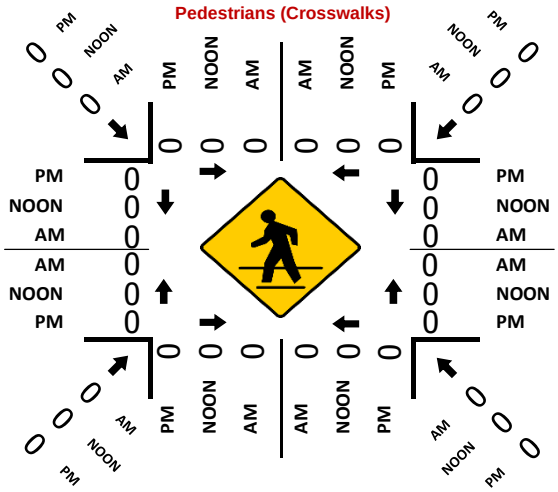
Total Vehicles (NOON)



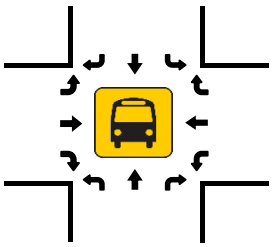
Total Vehicles (PM)



Pedestrians (Crosswalks)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: State College Blvd & Birch St
City: Brea
Control: Signalized

Project ID: 18-01231-005
Date: 11/13/2018

Total

NS/EW Streets:	State College Blvd				State College Blvd				Birch St				Birch St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	1	0	2	2	0	0	2	2	1	0	2	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	12	23	11	0	116	168	22	0	16	95	7	0	20	76	40	0	606
7:15 AM	21	19	19	0	131	235	13	0	9	89	10	0	20	85	43	0	694
7:30 AM	14	22	24	0	160	220	30	0	20	137	14	0	10	114	58	0	823
7:45 AM	20	34	27	0	184	144	49	0	23	121	8	0	19	172	88	0	889
8:00 AM	16	37	20	0	117	134	45	0	18	126	13	0	23	153	68	0	770
8:15 AM	17	35	17	0	99	104	44	0	27	84	10	0	34	137	55	0	663
8:30 AM	11	39	15	0	64	81	51	0	28	65	11	0	18	127	43	0	553
8:45 AM	20	33	9	0	73	84	59	0	12	82	17	0	23	117	43	0	572
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	131	242	142	0	944	1170	313	0	153	799	90	0	167	981	438	0	5570
APPROACH %'s :	25.44%	46.99%	27.57%	0.00%	38.90%	48.21%	12.90%	0.00%	14.68%	76.68%	8.64%	0.00%	10.53%	61.85%	27.62%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	71	112	90	0	592	733	137	0	70	473	45	0	72	524	257	0	3176
PEAK HR FACTOR :	0.845	0.757	0.833	0.000	0.804	0.780	0.699	0.000	0.761	0.863	0.804	0.000	0.783	0.762	0.730	0.000	0.893
	0.843				0.891				0.860				0.764				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	1	0	2	2	0	0	2	2	1	0	2	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	27	67	34	0	62	71	55	0	54	139	44	0	28	163	82	0	826
4:15 PM	33	83	36	0	67	65	64	0	43	153	29	0	33	150	102	0	858
4:30 PM	33	71	47	0	70	79	58	0	32	138	31	0	27	200	116	0	902
4:45 PM	31	75	35	0	87	72	58	0	35	161	29	0	33	238	145	0	999
5:00 PM	24	75	43	0	62	72	65	0	48	170	46	0	33	231	153	0	1022
5:15 PM	31	85	41	0	70	83	56	0	43	184	30	0	29	223	146	0	1021
5:30 PM	45	92	27	0	72	73	64	1	57	184	41	0	36	203	123	0	1018
5:45 PM	34	84	34	0	54	71	77	2	48	158	39	0	46	168	101	0	916
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	258	632	297	0	544	586	497	3	360	1287	289	0	265	1576	968	0	7562
APPROACH %'s :	21.74%	53.24%	25.02%	0.00%	33.37%	35.95%	30.49%	0.18%	18.60%	66.48%	14.93%	0.00%	9.43%	56.11%	34.46%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	131	327	146	0	291	300	243	1	183	699	146	0	131	895	567	0	4060
PEAK HR FACTOR :	0.728	0.889	0.849	0.000	0.836	0.904	0.935	0.250	0.803	0.950	0.793	0.000	0.910	0.940	0.926	0.000	0.993
	0.921				0.962				0.911				0.955				

Prepared by National Data & Surveying Services

State College Blvd & Birch St

Peak Hour Turning Movement Count

ID: 18-01231-005
City: Brea

Day: Tuesday
Date: 11/13/2018

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NONE	NONE
04:45 PM - 05:45 PM	04:00 PM - 06:00 PM

SOUTHBOUND — State College Blvd

AM	137	733	592	0	439	AM
NOON	0	0	0	0	0	NOON
PM	243	300	291	1	1078	PM

EASTBOUND — Birch St

AM	NOON	PM	
732	0	1269	
0	0	0	0
70	0	183	2
473	0	699	2
45	0	146	1
AM	NOON	PM	

WESTBOUND — Birch St

PM	NOON	AM	
567	0	257	1
895	0	524	2
131	0	72	2
0	0	0	0
1136	0	1155	
PM	NOON	AM	

NORTHBOUND — State College Blvd

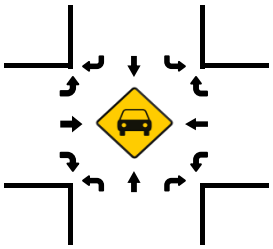
PM	577	0	131	327	146	PM
NOON	0	0	0	0	0	NOON
AM	850	0	71	112	90	AM

	0	2	2	0
	0	2	2	1

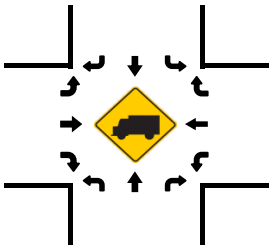
CONTROL: Signalized

TEV	3176 AM	0 NOON	4060 PM
PHF	0.89		0.99

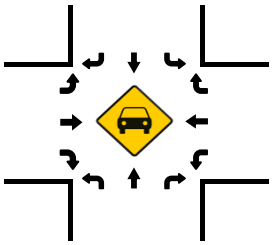
Total Vehicles (AM)



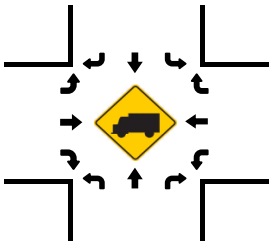
2axle (AM)



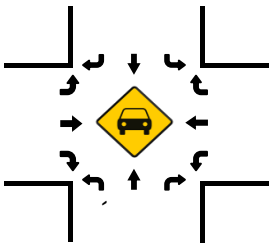
Total Vehicles (Noon)



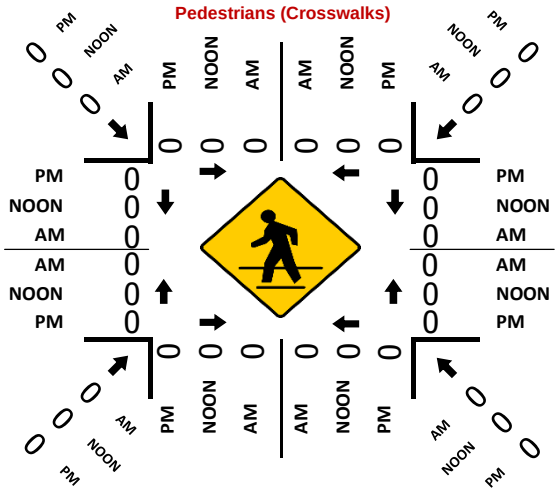
2axle (NOON)



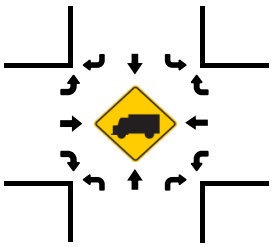
Total Vehicles (PM)



Pedestrians (Crosswalks)



2axle (PM)



INTERSECTION TURNING MOVEMENT COUNTS

T418

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Sat, May 18, 19

LOCATION: Brea
NORTH & SOUTH: State College
EAST & WEST: Birch

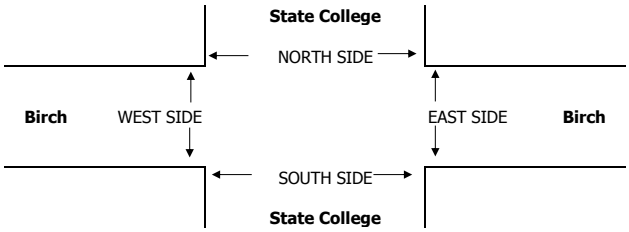
PROJECT #: SC2213
LOCATION #: 1
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER

☑ Add U-Turns to Left Turns

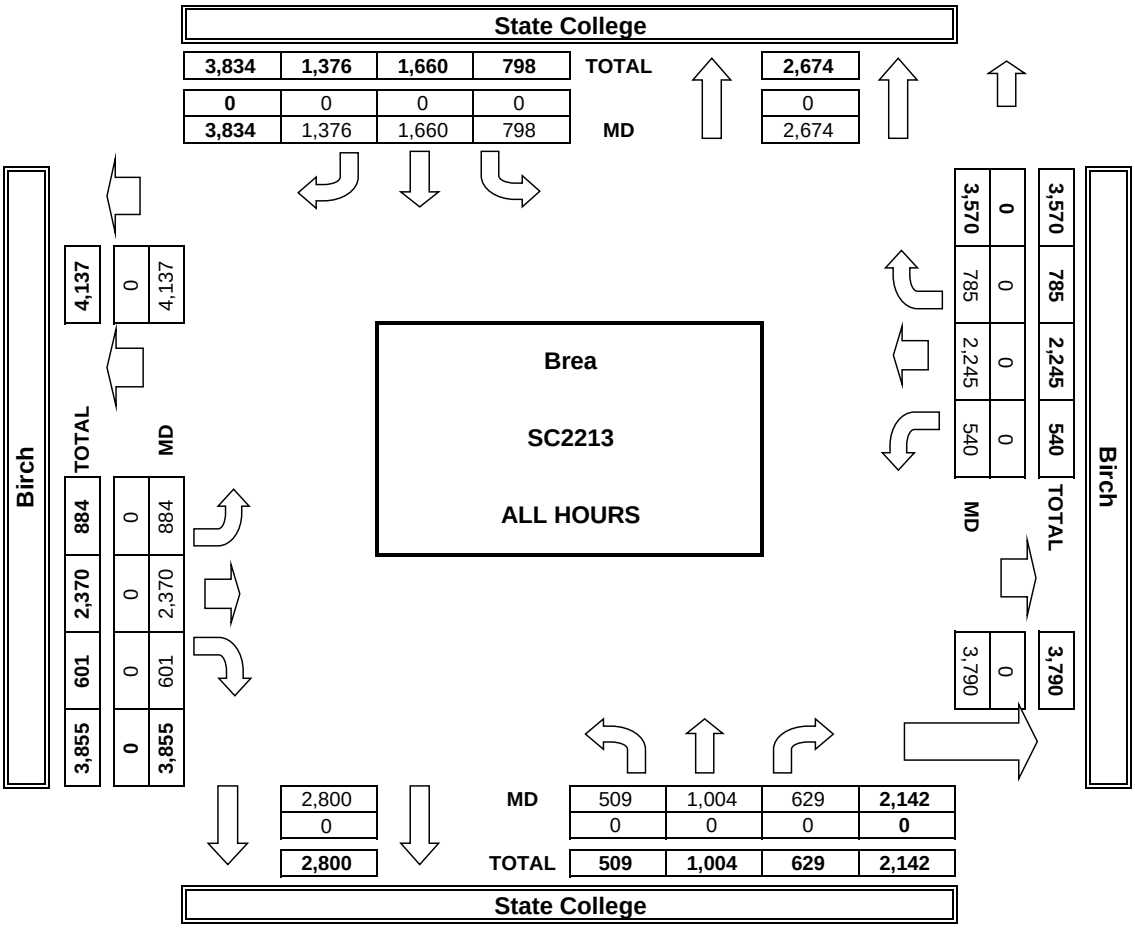
		NORTHBOUND State College			SOUTHBOUND State College			EASTBOUND Birch			WESTBOUND Birch				U-TURNS				
	LANES:	NL 2	NT 2	NR 1	SL 2	ST 2	SR 0	EL 2	ET 2	ER 1	WL 2	WT 2	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
MD	11:00 AM	26	36	27	35	83	69	37	117	32	32	147	40	681	0	0	0	0	0
	11:15 AM	33	63	22	39	102	78	44	107	35	35	142	44	744	0	0	0	0	0
	11:30 AM	30	62	28	41	92	84	54	130	27	35	141	46	770	0	2	1	1	4
	11:45 AM	29	52	33	67	98	89	40	154	46	37	175	55	875	0	0	0	0	0
	12:00 PM	24	57	37	61	119	95	55	148	40	39	160	46	881	0	1	1	0	2
	12:15 PM	37	60	40	73	126	97	51	158	35	40	150	51	918	0	1	0	0	1
	12:30 PM	35	59	45	46	125	104	60	180	44	44	170	52	964	0	1	1	0	2
	12:45 PM	21	66	44	60	145	113	48	172	35	31	145	57	937	0	0	1	0	1
	1:00 PM	40	49	51	55	98	82	62	156	36	32	140	54	855	0	0	0	0	0
	1:15 PM	38	78	42	65	101	60	58	153	42	34	127	35	833	0	1	1	0	2
	1:30 PM	41	70	37	51	98	71	53	164	46	35	128	50	844	0	2	0	0	2
	1:45 PM	25	69	45	56	110	90	76	149	42	26	138	55	881	0	0	1	0	1
	2:00 PM	34	69	36	36	74	78	66	140	35	28	117	58	771	0	0	1	0	1
	2:15 PM	32	62	52	30	94	95	58	139	30	32	110	57	791	0	0	0	0	0
	2:30 PM	28	81	43	33	77	79	65	159	36	37	122	45	805	0	0	0	0	0
	2:45 PM	36	71	47	50	118	92	57	144	40	23	133	40	851	0	0	0	0	0
	VOLUMES	509	1,004	629	798	1,660	1,376	884	2,370	601	540	2,245	785	13,401	0	8	7	1	16
	APPROACH %	24%	47%	29%	21%	43%	36%	23%	61%	16%	15%	63%	22%						
	APP/DEPART	2,142	/	2,674	3,834	/	2,800	3,855	/	3,790	3,570	/	4,137	0					
	BEGIN PEAK HR		12:00 PM																
	VOLUMES	117	242	166	240	515	409	214	658	154	154	625	206	3,700					
	APPROACH %	22%	46%	32%	21%	44%	35%	21%	64%	15%	16%	63%	21%						
	PEAK HR FACTOR		0.944			0.915			0.903			0.926		0.960					
	APP/DEPART	525	/	662	1,164	/	823	1,026	/	1,061	985	/	1,154	0					

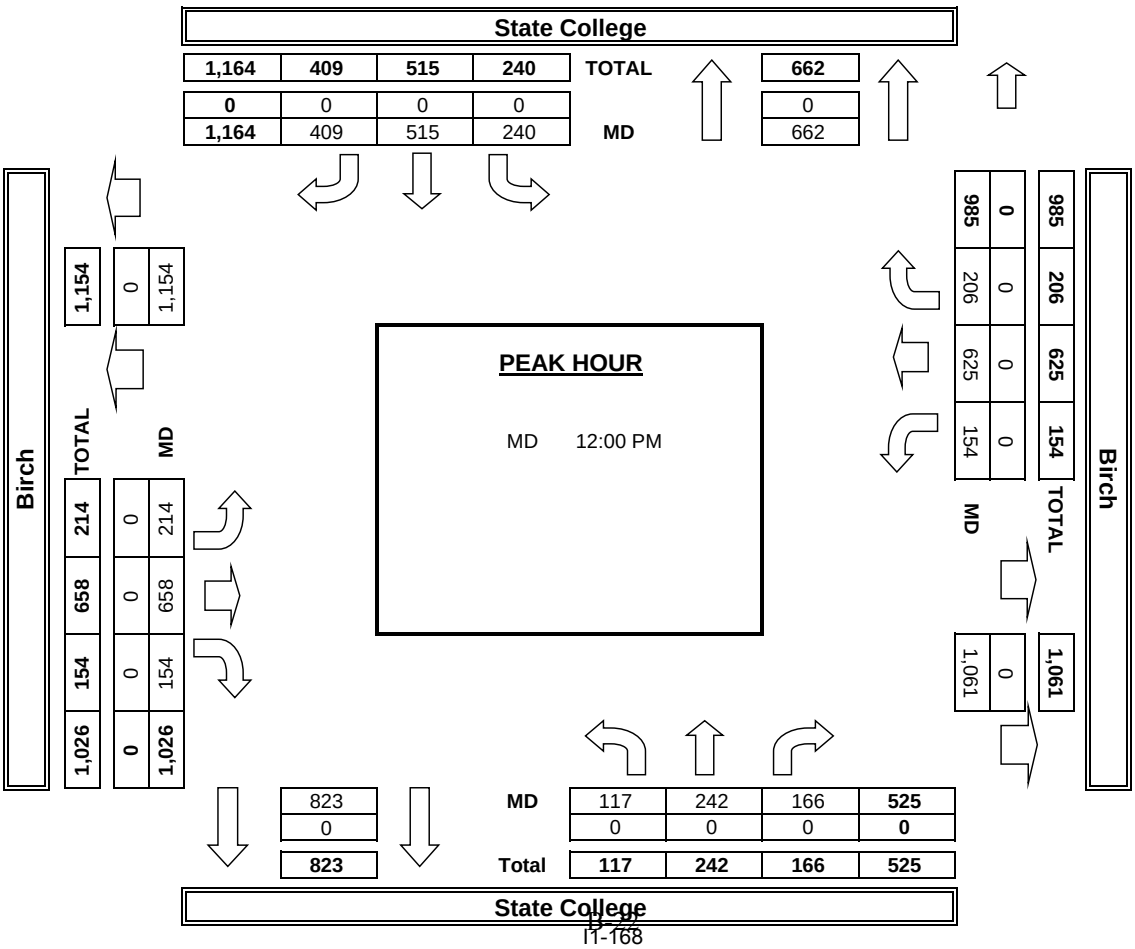


		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
MD	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AM BEGIN PEAK HR	12:00 PM					0	0	0	0	0					

AimTD LLC

TURNING MOVEMENT COUNTS





National Data & Surveying Services

Intersection Turning Movement Count

Location: S Associated Rd & Birch St
City: Brea
Control: Signalized

Project ID: 18-01231-006
Date: 11/13/2018

Total

NS/EW Streets:	S Associated Rd				S Associated Rd				Birch St				Birch St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	1	1	0	1	1	0	0	1	2	0	0	2	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	20	0	51	4	5	4	0	0	0	155	71	0	74	88	1	0	473
7:15 AM	23	0	45	0	10	4	5	0	0	157	73	0	66	104	0	0	487
7:30 AM	40	1	58	7	9	13	3	0	1	220	86	0	80	134	4	0	656
7:45 AM	50	1	66	6	14	6	1	0	0	249	85	0	77	206	0	0	761
8:00 AM	47	3	69	10	6	3	2	0	0	228	68	0	84	194	1	0	715
8:15 AM	54	1	96	7	22	5	2	0	1	160	46	0	81	169	5	0	649
8:30 AM	53	1	47	8	5	3	2	0	3	99	52	0	75	120	3	0	471
8:45 AM	43	0	41	6	5	5	2	0	1	101	60	0	45	138	2	0	449
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	330	7	473	48	76	43	17	0	6	1369	541	0	582	1153	16	0	4661
APPROACH %'s :	38.46%	0.82%	55.13%	5.59%	55.88%	31.62%	12.50%	0.00%	0.31%	71.45%	28.24%	0.00%	33.24%	65.85%	0.91%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	191	6	289	30	51	27	8	0	2	857	285	0	322	703	10	0	2781
PEAK HR FACTOR :	0.884	0.500	0.753	0.750	0.580	0.519	0.667	0.000	0.500	0.860	0.828	0.000	0.958	0.853	0.500	0.000	0.914
	0.816				0.741				0.856				0.914				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	1	1	0	1	1	0	0	1	2	0	0	2	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	81	4	56	2	2	2	2	0	0	167	58	1	66	199	6	0	646
4:15 PM	86	2	68	2	1	2	2	0	0	186	62	0	59	194	3	0	667
4:30 PM	99	4	67	3	3	1	1	0	0	200	60	0	60	260	5	0	763
4:45 PM	124	7	74	5	3	3	1	0	5	196	66	0	60	276	5	0	825
5:00 PM	120	9	77	4	2	6	2	0	1	196	76	1	76	279	5	0	854
5:15 PM	95	7	87	2	3	5	2	0	1	209	61	2	77	299	2	0	852
5:30 PM	81	7	85	3	2	4	1	0	2	203	67	0	54	288	4	0	801
5:45 PM	80	5	74	3	5	4	2	0	3	181	53	0	57	217	6	0	690
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	766	45	588	24	21	27	13	0	12	1538	503	4	509	2012	36	0	6098
APPROACH %'s :	53.83%	3.16%	41.32%	1.69%	34.43%	44.26%	21.31%	0.00%	0.58%	74.77%	24.45%	0.19%	19.91%	78.69%	1.41%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	420	30	323	14	10	18	6	0	9	804	270	3	267	1142	16	0	3332
PEAK HR FACTOR :	0.847	0.833	0.928	0.700	0.833	0.750	0.750	0.000	0.450	0.962	0.888	0.375	0.867	0.955	0.800	0.000	0.975
	0.937				0.850				0.991				0.942				

Prepared by National Data & Surveying Services

S Associated Rd & Birch St

Peak Hour Turning Movement Count

ID: 18-01231-006
City: Brea

Day: Tuesday
Date: 11/13/2018

PEAK HOURS	COUNT PERIODS
07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NONE	NONE
04:45 PM - 05:45 PM	04:00 PM - 06:00 PM

S Associated Rd — SOUTHBOUND

AM	8	27	51	0	18	AM
NOON	0	0	0	0	0	NOON
PM	6	18	10	0	55	PM

Birch St — EASTBOUND

AM	NOON	PM	
902	0	1571	
0	0	3	0
2	0	9	1
857	0	804	2
285	0	270	0

Birch St — WESTBOUND

PM	NOON	AM	
16	0	10	0
1142	0	703	2
267	0	322	2
0	0	0	0
1137	0	1197	

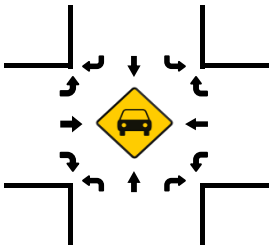
S Associated Rd — NORTHBOUND

PM	569	14	420	30	323	PM
NOON	0	0	0	0	0	NOON
AM	664	30	191	6	289	AM

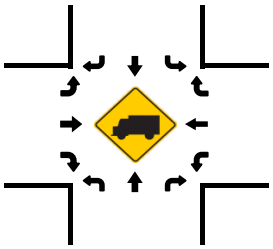
CONTROL: Signalized

		AM	NOON	PM
TEV	2781	0	3332	
PHF		0.91		0.98

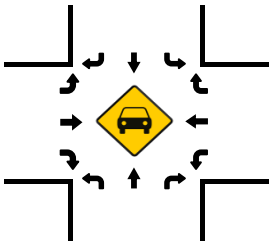
Total Vehicles (AM)



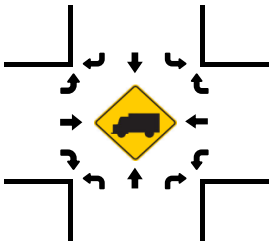
2axle (AM)



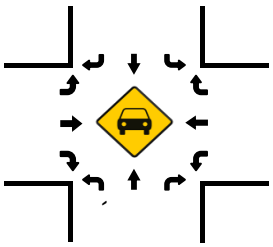
Total Vehicles (Noon)



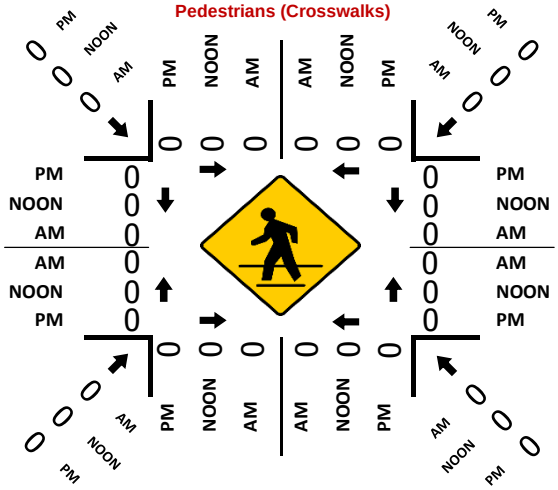
2axle (NOON)



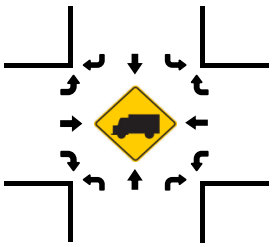
Total Vehicles (PM)



Pedestrians (Crosswalks)



2axle (PM)



INTERSECTION TURNING MOVEMENT COUNTS

T418

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Sat, May 18, 19

LOCATION: Brea
NORTH & SOUTH: S Associated
EAST & WEST: Birch

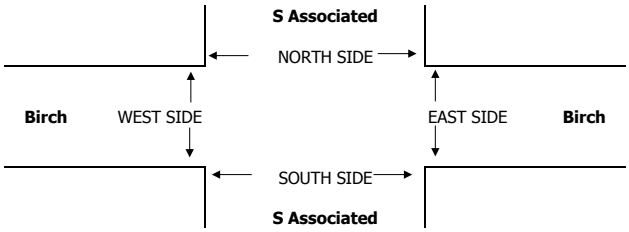
PROJECT #: SC2213
LOCATION #: 2
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

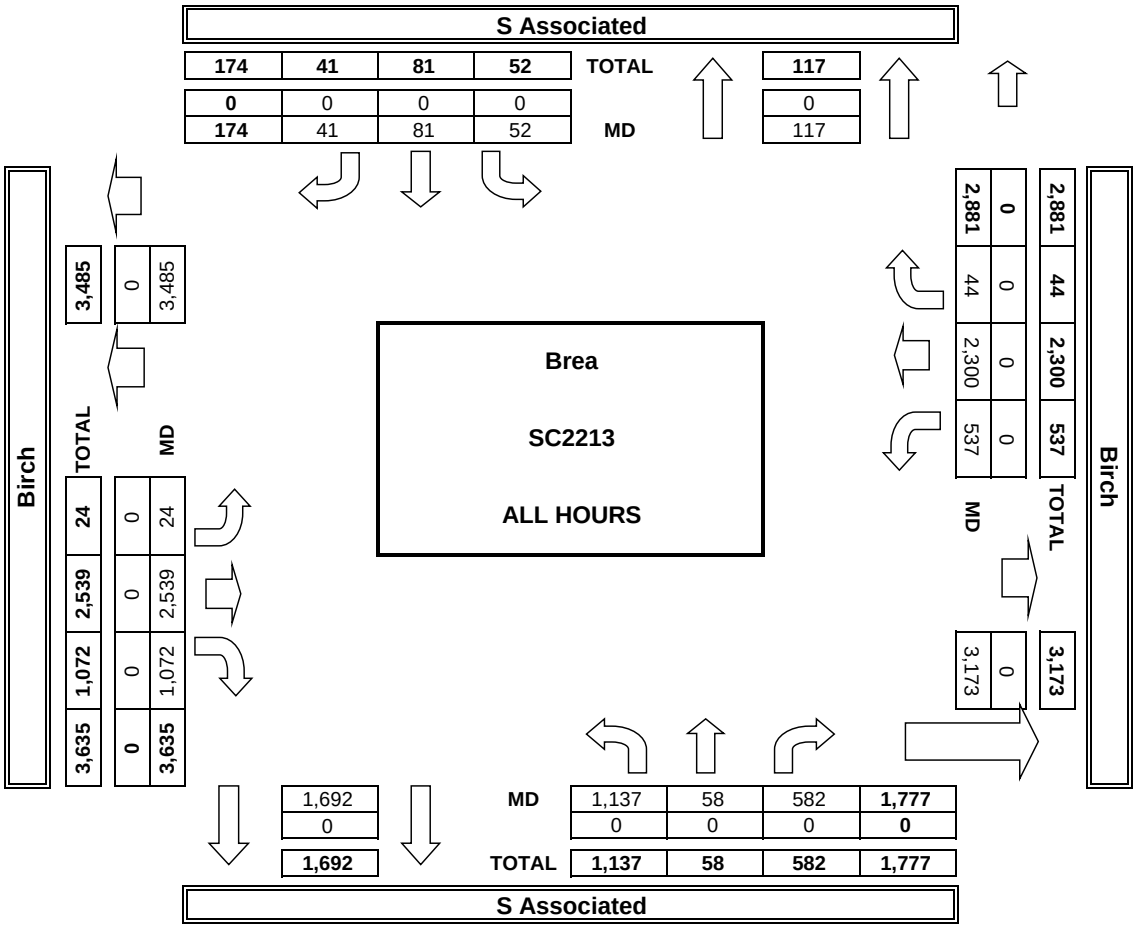
		NORTHBOUND S Associated			SOUTHBOUND S Associated			EASTBOUND Birch			WESTBOUND Birch				U-TURNS				
	LANES:	NL 2	NT 1	NR 1	SL 1	ST 1	SR 0	EL 1	ET 2	ER 0	WL 2	WT 2	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
MD	11:00 AM	66	2	32	1	5	3	1	107	45	34	146	4	446	0	0	0	0	0
	11:15 AM	62	3	27	7	5	5	1	130	49	35	141	2	467	0	0	0	0	0
	11:30 AM	59	2	33	5	9	5	2	129	67	33	156	5	505	0	0	1	0	1
	11:45 AM	88	6	31	6	4	4	1	152	71	32	157	4	556	0	0	1	0	1
	12:00 PM	80	6	38	3	7	5	2	154	74	48	156	1	574	1	0	1	0	2
	12:15 PM	71	3	37	0	7	2	3	164	85	27	155	4	558	1	0	2	0	3
	12:30 PM	83	2	40	3	6	4	3	169	75	29	170	2	586	0	0	0	0	0
	12:45 PM	69	7	44	5	0	1	0	182	84	41	173	5	611	0	0	0	0	0
	1:00 PM	85	5	41	3	2	0	1	197	64	23	135	1	557	0	0	1	0	1
	1:15 PM	75	2	33	5	11	0	0	165	75	36	120	3	525	0	0	0	0	0
	1:30 PM	73	3	36	1	6	1	0	163	77	41	119	1	521	0	0	0	0	0
	1:45 PM	65	6	49	4	0	2	3	190	72	41	145	4	581	0	0	1	0	1
	2:00 PM	57	4	32	1	3	4	1	145	70	17	123	2	459	0	0	0	0	0
	2:15 PM	75	1	39	2	6	2	2	169	46	35	121	3	501	0	0	1	0	1
	2:30 PM	64	0	39	4	8	3	2	158	58	29	129	1	495	0	0	1	0	1
	2:45 PM	65	6	31	2	2	0	2	165	60	36	154	2	525	0	0	0	0	0
	VOLUMES	1,137	58	582	52	81	41	24	2,539	1,072	537	2,300	44	8,467	2	0	9	0	11
	APPROACH %	64%	3%	33%	30%	47%	24%	1%	70%	29%	19%	80%	2%						
	APP/DEPART	1,777	/	117	174	/	1,692	3,635	/	3,173	2,881	/	3,485	0					
	BEGIN PEAK HR		12:00 PM																
	VOLUMES	303	18	159	11	20	12	8	669	318	145	654	12	2,329					
	APPROACH %	63%	4%	33%	26%	47%	28%	1%	67%	32%	18%	81%	1%						
	PEAK HR FACTOR		0.960			0.717			0.935			0.926		0.953					
	APP/DEPART	480	/	35	43	/	485	995	/	839	811	/	970	0					

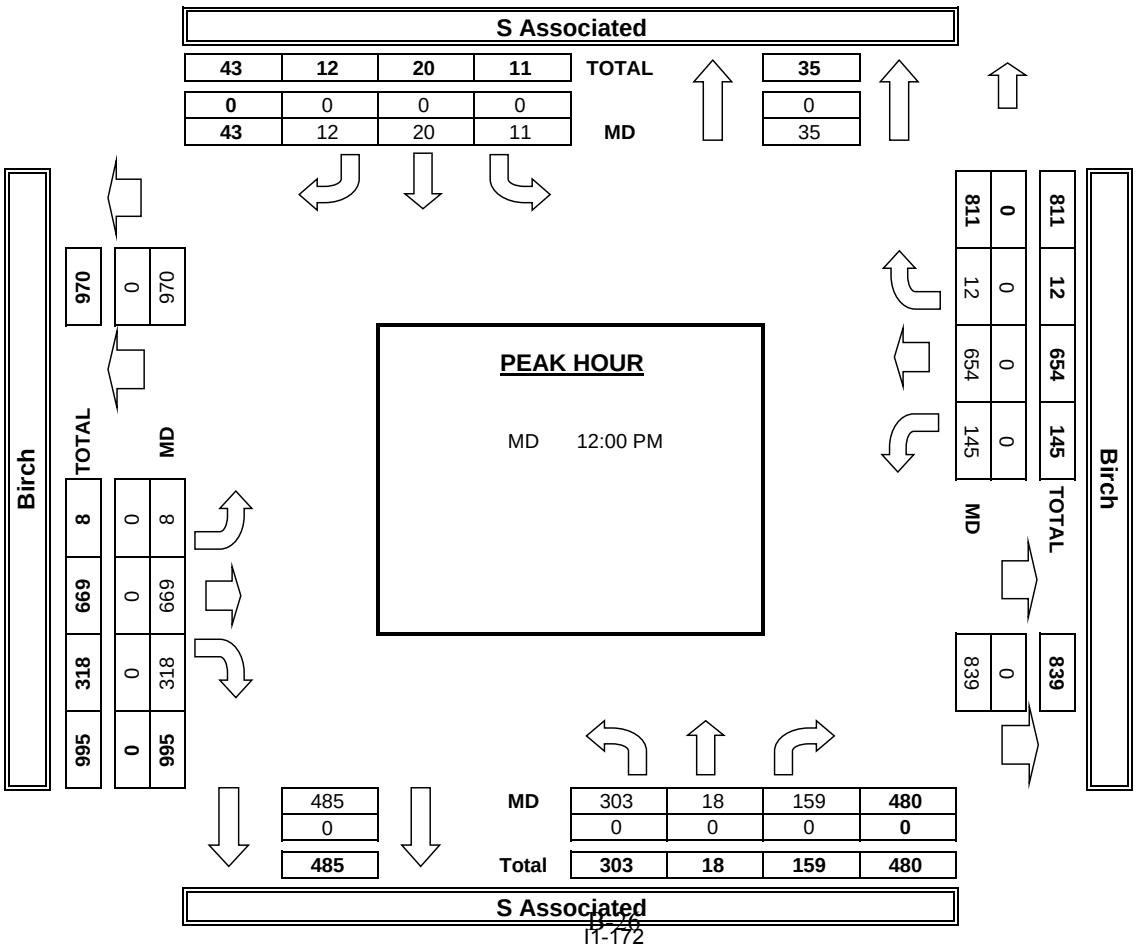


		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
MD	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AM BEGIN PEAK HR	12:00 PM					0	0	0	0	0					

AimTD LLC

TURNING MOVEMENT COUNTS





National Data & Surveying Services

Intersection Turning Movement Count

Location: S Randolph Ave & Madison Way
City: Brea
Control: Signalized

Project ID: 19-01152-001
Date: 8/6/2019

Total

NS/EW Streets:	S Randolph Ave				S Randolph Ave				Madison Way				Madison Way				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	1	1	0	0	1	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	1	21	0	0	1	22	1	0	5	0	7	0	0	0	0	0	58
7:15 AM	1	26	2	0	1	34	1	0	5	0	17	0	0	0	0	0	87
7:30 AM	6	28	1	0	1	22	5	0	5	0	19	0	0	0	0	0	87
7:45 AM	11	29	3	0	1	22	0	0	11	2	23	0	0	0	0	0	102
8:00 AM	5	29	3	0	3	24	2	0	7	0	9	0	0	0	0	0	82
8:15 AM	2	37	1	0	1	43	6	0	7	0	3	0	0	0	0	0	100
8:30 AM	4	15	3	0	0	29	2	0	4	0	14	0	0	0	0	0	71
8:45 AM	10	30	2	0	0	31	5	0	8	1	11	0	0	0	0	0	98
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	40	215	15	0	8	227	22	0	52	3	103	0	0	0	0	0	685
APPROACH %'s :	14.81%	79.63%	5.56%	0.00%	3.11%	88.33%	8.56%	0.00%	32.91%	1.90%	65.19%	0.00%					
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	24	123	8	0	6	111	13	0	30	2	54	0	0	0	0	0	371
PEAK HR FACTOR :	0.545	0.831	0.667	0.000	0.500	0.645	0.542	0.000	0.682	0.250	0.587	0.000	0.000	0.000	0.000	0.000	0.909
	0.901				0.650				0.597								

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	1	1	0	0	1	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	14	66	11	0	7	45	3	0	10	1	8	0	16	2	17	0	200
4:15 PM	8	66	9	0	10	42	8	0	9	1	6	0	18	1	18	0	196
4:30 PM	10	67	10	0	8	44	6	0	8	1	7	0	11	0	18	0	190
4:45 PM	5	67	10	0	1	57	3	2	5	0	10	0	12	2	9	0	183
5:00 PM	7	76	14	0	5	61	7	0	11	1	10	0	19	0	12	0	223
5:15 PM	6	77	11	0	8	53	4	0	11	1	14	0	19	2	6	0	212
5:30 PM	15	63	9	0	7	58	6	0	22	1	16	0	20	2	8	0	227
5:45 PM	16	72	5	0	6	56	9	0	13	1	8	0	11	0	9	0	206
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	81	554	79	0	52	416	46	2	89	7	79	0	126	9	97	0	1637
APPROACH %'s :	11.34%	77.59%	11.06%	0.00%	10.08%	80.62%	8.91%	0.39%	50.86%	4.00%	45.14%	0.00%	54.31%	3.88%	41.81%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	44	288	39	0	26	228	26	0	57	4	48	0	69	4	35	0	868
PEAK HR FACTOR :	0.688	0.935	0.696	0.000	0.813	0.934	0.722	0.000	0.648	1.000	0.750	0.000	0.863	0.500	0.729	0.000	0.956
	0.956				0.959				0.699				0.871				

Prepared by National Data & Surveying Services

S Randolph Ave & Madison Way

Peak Hour Turning Movement Count

ID: 19-01152-001
City: Brea

Day: Tuesday
Date: 08/06/2019

PEAK HOURS	COUNT PERIODS
07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NONE	NONE
05:00 PM - 06:00 PM	04:00 PM - 06:00 PM

S Randolph Ave — SOUTHBOUND

AM	13	111	6	0	153	AM
NOON	0	0	0	0	0	NOON
PM	26	228	26	0	380	PM
	0	2	1	0		

Madison Way — EASTBOUND

AM	NOON	PM	
37	0	74	
0	0	0	0
30	0	57	1
2	0	4	1
54	0	48	0
AM	NOON	PM	

CONTROL

Signalized

TEV	371	0	868
	AM	NOON	PM
PHF	0.91		0.96

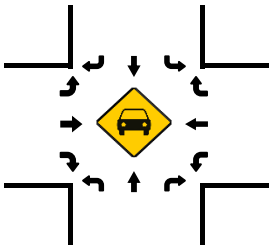
Madison Way — WESTBOUND

PM	NOON	AM	
35	0	0	0
4	0	0	1
69	0	0	1
0	0	0	0
69	0	16	
PM	NOON	AM	

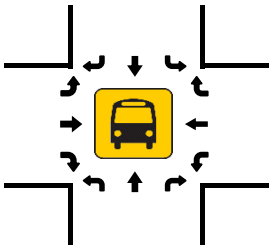
S Randolph Ave — NORTHBOUND

PM	345	0	44	288	39	PM
NOON	0	0	0	0	0	NOON
AM	165	0	24	123	8	AM
		0	1	2	0	

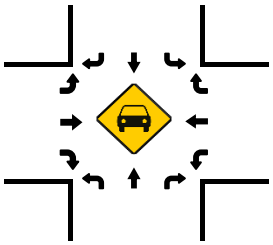
Total Vehicles (AM)



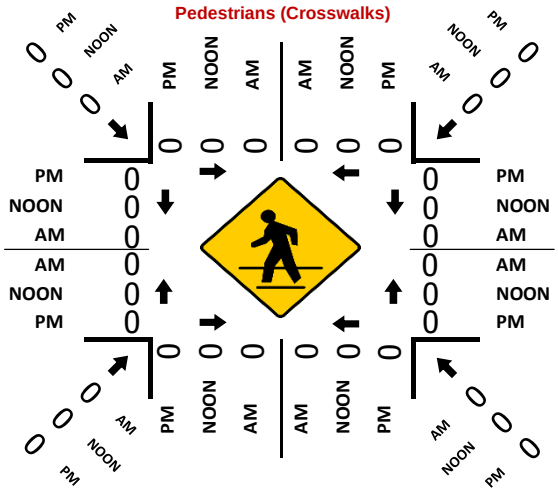
Total Vehicles (AM)



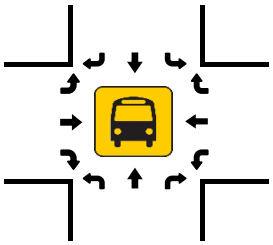
Total Vehicles (NOON)



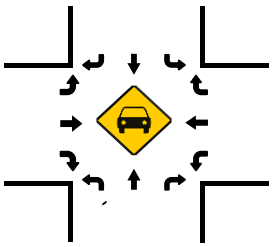
Pedestrians (Crosswalks)



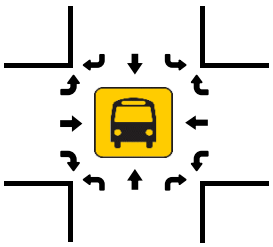
Total Vehicles (NOON)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: S Randolph Ave & Madison Way
City: Brea
Control: Signalized

Project ID: 19-01152-001
Date: 8/3/2019

Total

NS/EW Streets:	S Randolph Ave				S Randolph Ave				Madison Way				Madison Way				
NOON	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	1	1	0	0	1	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
11:00 AM	6	47	21	0	9	50	1	0	7	3	11	0	9	2	7	0	173
11:15 AM	5	53	21	0	11	55	4	0	3	2	5	0	7	0	8	0	174
11:30 AM	4	54	33	0	13	60	5	0	7	1	10	0	13	0	14	0	214
11:45 AM	10	65	30	0	14	60	5	0	9	3	11	0	14	1	7	0	229
12:00 PM	8	67	28	0	10	67	4	0	13	1	12	0	17	1	15	0	243
12:15 PM	5	68	23	0	17	69	4	0	6	1	13	0	20	1	11	0	238
12:30 PM	4	63	30	0	21	51	6	0	1	3	9	0	20	0	13	0	221
12:45 PM	3	55	25	0	18	53	5	0	12	5	21	0	19	2	15	0	233
1:00 PM	5	48	37	0	11	54	6	0	6	3	14	0	28	1	10	0	223
1:15 PM	2	69	27	0	13	47	4	0	3	0	5	0	20	4	21	0	215
1:30 PM	3	70	24	0	17	52	3	0	4	2	5	0	20	1	17	0	218
1:45 PM	1	74	36	0	14	45	1	0	12	3	16	0	22	0	19	0	243
2:00 PM	1	53	33	1	14	51	5	0	9	2	15	0	19	2	15	0	220
2:15 PM	4	53	27	0	12	39	4	1	4	3	11	0	27	0	20	0	205
2:30 PM	2	51	19	0	16	52	4	0	5	1	5	0	26	2	20	0	203
2:45 PM	5	64	30	0	9	63	6	0	2	1	6	0	17	1	18	0	222
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	68	954	444	1	219	868	67	1	103	34	169	0	298	18	230	0	3474
APPROACH %'s :	4.64%	65.03%	30.27%	0.07%	18.96%	75.15%	5.80%	0.09%	33.66%	11.11%	55.23%	0.00%	54.58%	3.30%	42.12%	0.00%	
PEAK HR :	12:00 PM - 01:00 PM																TOTAL
PEAK HR VOL :	20	253	106	0	66	240	19	0	32	10	55	0	76	4	54	0	935
PEAK HR FACTOR :	0.625	0.930	0.883	0.000	0.786	0.870	0.792	0.000	0.615	0.500	0.655	0.000	0.950	0.500	0.900	0.000	0.962
		0.920				0.903				0.638				0.931			

Prepared by National Data & Surveying Services

S Randolph Ave & Madison Way

Peak Hour Turning Movement Count

ID: 19-01152-001
City: Brea

Day: Saturday
Date: 08/03/2019

PEAK HOURS	COUNT PERIODS
NONE	NONE
12:00 PM - 01:00 PM	11:00 AM - 03:00 PM
NONE	NONE

SOUTHBOUND (S Randolph Ave)

AM	0	0	0	0	0	AM
NOON	19	240	66	0	339	NOON
PM	0	0	0	0	0	PM

EASTBOUND (Madison Way)

AM	NOON	PM	
0	43	0	
0	0	0	0
0	32	0	1
0	10	0	1
0	55	0	0

WESTBOUND (Madison Way)

PM	NOON	AM	
0	54	0	0
0	4	0	1
0	76	0	1
0	0	0	0
0	182	0	

NORTHBOUND (S Randolph Ave)

PM	0	0	0	0	0	PM
NOON	371	0	20	253	106	NOON
AM	0	0	0	0	0	AM

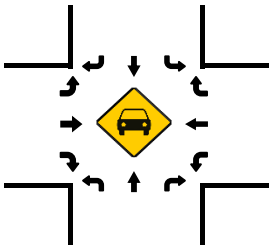
	0	2	1	0
	0	1	2	0

CONTROL

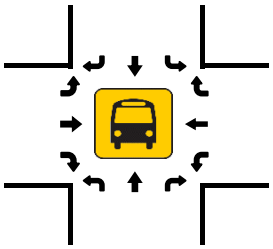
Signalized

	AM	NOON	PM
TEV	0	935	0
PHF		0.96	

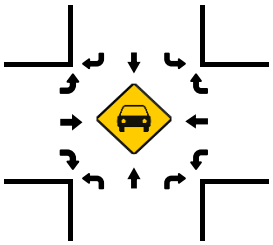
Total Vehicles (AM)



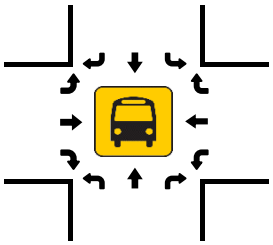
Total Vehicles (AM)



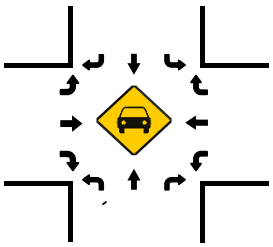
Total Vehicles (NOON)



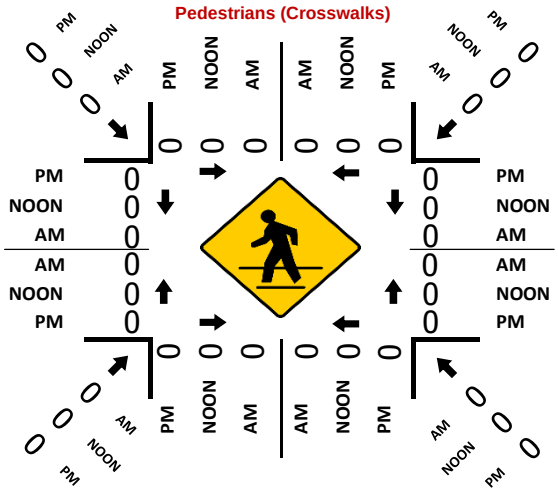
Total Vehicles (NOON)



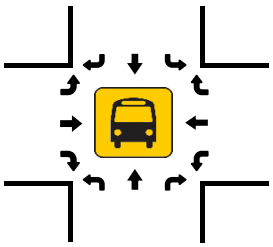
Total Vehicles (PM)



Pedestrians (Crosswalks)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: S Randolph Ave & T Brea Mall Dr
City: Brea
Control: Signalized

Project ID: 19-01152-002
Date: 8/6/2019

Total

NS/EW Streets:	S Randolph Ave				S Randolph Ave				T Brea Mall Dr				T Brea Mall Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	0	1	0	0	1.3	0.3	0.3	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	23	14	0	1	25	3	0	0	0	3	0	2	0	0	0	71
7:15 AM	0	28	7	0	0	46	1	0	0	0	0	0	1	0	0	0	83
7:30 AM	0	35	11	0	1	37	3	0	1	0	0	0	3	0	0	0	91
7:45 AM	2	45	12	0	2	40	0	0	2	2	1	0	0	0	1	0	107
8:00 AM	3	43	4	0	4	25	2	0	0	0	0	0	3	0	0	0	84
8:15 AM	1	42	15	0	0	36	3	0	0	0	0	0	1	0	2	0	100
8:30 AM	2	29	16	0	3	38	1	0	0	0	0	0	8	0	0	0	97
8:45 AM	6	42	19	0	5	35	0	0	1	0	1	0	8	0	2	0	119
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	14	287	98	0	16	282	13	0	4	2	5	0	26	0	5	0	752
APPROACH %'s :	3.51%	71.93%	24.56%	0.00%	5.14%	90.68%	4.18%	0.00%	36.36%	18.18%	45.45%	0.00%	83.87%	0.00%	16.13%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	12	156	54	0	12	134	6	0	1	0	1	0	20	0	4	0	400
PEAK HR FACTOR :	0.500	0.907	0.711	0.000	0.600	0.882	0.500	0.000	0.250	0.000	0.250	0.000	0.625	0.000	0.500	0.000	0.840
	0.828				0.905				0.250				0.600				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	0	1	0	0	1.3	0.3	0.3	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	77	41	0	6	63	4	0	2	0	1	0	67	1	13	0	275
4:15 PM	7	67	63	0	3	56	1	0	3	1	1	0	45	0	15	0	262
4:30 PM	1	73	45	0	3	53	6	0	1	2	4	0	53	0	12	0	253
4:45 PM	3	64	76	0	8	75	4	0	4	2	2	0	55	1	8	0	302
5:00 PM	5	81	55	0	7	85	6	0	4	1	1	0	52	0	9	0	306
5:15 PM	1	82	70	0	5	83	2	0	3	0	5	0	53	0	8	0	312
5:30 PM	6	75	67	0	9	86	6	0	5	0	3	0	64	2	10	0	333
5:45 PM	4	75	66	0	4	65	2	0	1	0	7	0	42	1	14	0	281
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	27	594	483	0	45	566	31	0	23	6	24	0	431	5	89	0	2324
APPROACH %'s :	2.45%	53.80%	43.75%	0.00%	7.01%	88.16%	4.83%	0.00%	43.40%	11.32%	45.28%	0.00%	82.10%	0.95%	16.95%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	15	302	268	0	29	329	18	0	16	3	11	0	224	3	35	0	1253
PEAK HR FACTOR :	0.625	0.921	0.882	0.000	0.806	0.956	0.750	0.000	0.800	0.375	0.550	0.000	0.875	0.375	0.875	0.000	0.941
	0.956				0.931				0.938				0.862				

Prepared by National Data & Surveying Services

S Randolph Ave & T Brea Mall Dr

Peak Hour Turning Movement Count

ID: 19-01152-002
City: Brea

Day: Tuesday
Date: 08/06/2019

PEAK HOURS

AM	08:00 AM - 09:00 AM
NOON	NONE
PM	04:45 PM - 05:45 PM

COUNT PERIODS

AM	07:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 06:00 PM

S Randolph Ave — SOUTHBOUND

	L	T	R	U	Total	
AM	6	134	12	0	161	AM
NOON	0	0	0	0	0	NOON
PM	18	329	29	0	353	PM

T Brea Mall Dr — EASTBOUND

AM	NOON	PM		
18	0	36		
0	0	0	0	
1	0	16	0	
0	0	3	1	
1	0	11	0	
AM	NOON	PM		

T Brea Mall Dr — WESTBOUND

PM	NOON	AM	
35	0	4	0.3
3	0	0	0.3
224	0	20	1.3
0	0	0	0
300	0	66	
PM	NOON	AM	

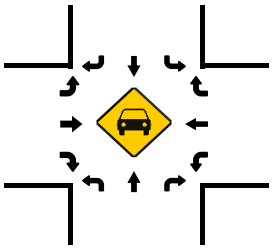
S Randolph Ave — NORTHBOUND

	L	T	T	R	Total	
PM	564	0	15	302	268	PM
NOON	0	0	0	0	0	NOON
AM	155	0	12	156	54	AM

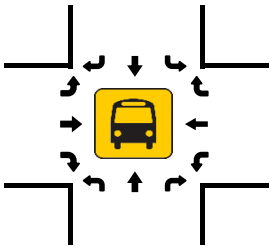
CONTROL: Signalized

TEV	400	0	1253
	AM	NOON	PM
PHF	0.84		0.94

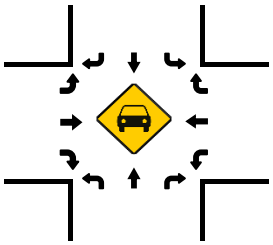
Total Vehicles (AM)



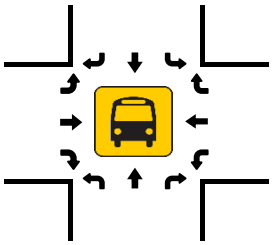
Total Vehicles (AM)



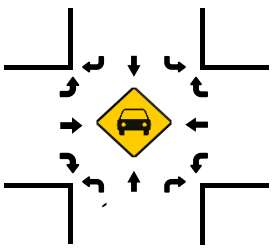
Total Vehicles (NOON)



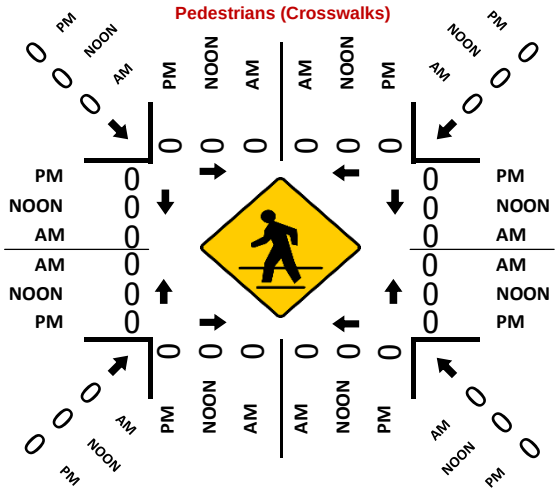
Total Vehicles (NOON)



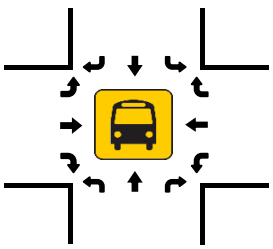
Total Vehicles (PM)



Pedestrians (Crosswalks)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: S Randolph Ave & T Brea Mall Dr
City: Brea
Control: Signalized

Project ID: 19-01152-002
Date: 8/3/2019

Total

NS/EW Streets:	S Randolph Ave				S Randolph Ave				T Brea Mall Dr				T Brea Mall Dr				
NOON	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	0	1	0	0	1.3	0.3	0.3	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
11:00 AM	11	61	71	0	4	60	6	0	5	1	3	0	42	0	7	0	271
11:15 AM	8	67	67	0	6	56	9	0	4	3	4	0	36	0	10	1	271
11:30 AM	16	78	84	1	8	66	7	0	8	1	6	0	43	0	10	0	328
11:45 AM	5	88	84	1	9	75	3	0	9	3	9	0	46	2	9	1	344
12:00 PM	7	90	80	0	13	78	6	0	4	3	6	0	50	0	12	0	349
12:15 PM	9	84	69	0	14	76	12	0	4	6	4	0	40	0	11	0	329
12:30 PM	3	82	97	1	6	76	4	0	7	3	7	0	62	4	11	0	363
12:45 PM	5	64	97	0	13	78	3	0	5	1	2	0	71	0	12	0	351
1:00 PM	6	74	88	0	17	76	4	0	6	4	7	0	80	2	12	0	376
1:15 PM	6	78	86	0	4	67	5	0	6	5	4	0	73	3	13	0	350
1:30 PM	1	83	86	0	6	64	1	0	5	2	6	0	84	0	13	0	351
1:45 PM	7	78	94	1	4	72	10	0	6	2	8	0	90	1	22	0	395
2:00 PM	8	73	77	0	8	75	5	0	5	1	4	0	80	1	13	0	350
2:15 PM	3	65	69	0	9	56	8	0	2	3	2	0	84	2	15	0	318
2:30 PM	11	66	66	0	11	72	6	0	4	2	3	0	86	0	5	0	332
2:45 PM	12	74	79	0	10	69	7	0	4	1	5	0	77	4	25	0	367
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	118	1205	1294	4	142	1116	96	0	84	41	80	0	1044	19	200	2	5445
APPROACH %'s :	4.50%	45.97%	49.37%	0.15%	10.49%	82.42%	7.09%	0.00%	40.98%	20.00%	39.02%	0.00%	82.53%	1.50%	15.81%	0.16%	
PEAK HR :	01:00 PM - 02:00 PM																TOTAL
PEAK HR VOL :	20	313	354	1	31	279	20	0	23	13	25	0	327	6	60	0	1472
PEAK HR FACTOR :	0.714	0.943	0.941	0.250	0.456	0.918	0.500	0.000	0.958	0.650	0.781	0.000	0.908	0.500	0.682	0.000	0.932
		0.956				0.851				0.897				0.869			

Prepared by National Data & Surveying Services

S Randolph Ave & T Brea Mall Dr

Peak Hour Turning Movement Count

ID: 19-01152-002
City: Brea

Day: Saturday
Date: 08/03/2019

PEAK HOURS	COUNT PERIODS
NONE	NONE
01:00 PM - 02:00 PM	11:00 AM - 03:00 PM
NONE	NONE

S Randolph Ave — SOUTHBOUND

AM	0	0	0	0	0	AM
NOON	20	279	31	0	396	NOON
PM	0	0	0	0	0	PM

0 2 1 0

T Brea Mall Dr — EASTBOUND

AM	NOON	PM	
0	46	0	
0	0	0	0
0	23	0	0
0	13	0	1
0	25	0	0
AM	NOON	PM	

CONTROL

Signalized

	AM	NOON	PM
TEV	0	1472	0
PHF		0.93	

T Brea Mall Dr — WESTBOUND

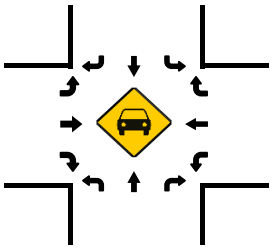
PM	NOON	AM	
0	60	0	0.3
0	6	0	0.3
0	327	0	1.3
0	0	0	0
0	398	0	
PM	NOON	AM	

0 1 2 0

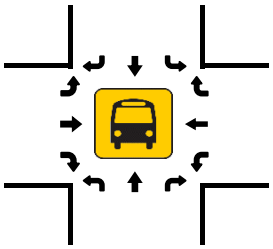
S Randolph Ave — NORTHBOUND

PM	0	0	0	0	0	PM
NOON	632	1	20	313	354	NOON
AM	0	0	0	0	0	AM

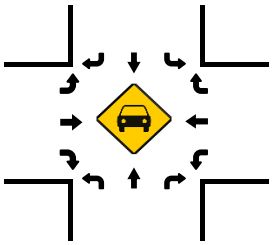
Total Vehicles (AM)



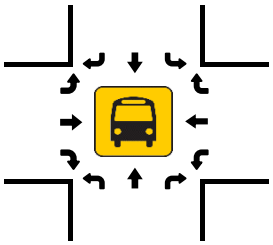
Total Vehicles (AM)



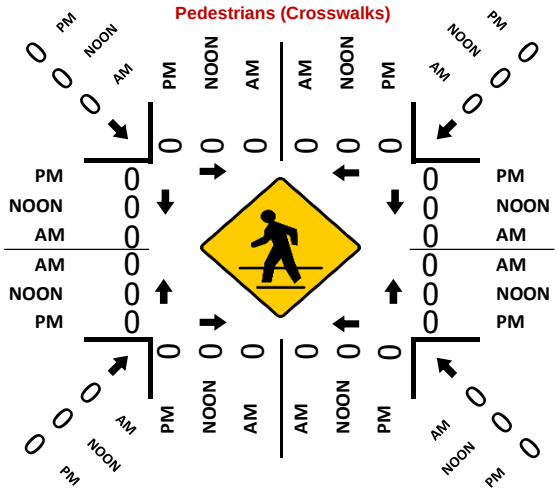
Total Vehicles (NOON)



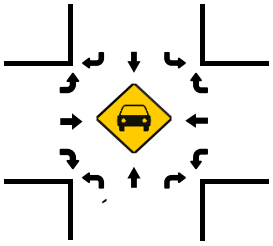
Total Vehicles (NOON)



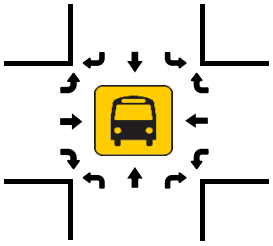
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Brea Mall S Dwy & S State College Blvd
City: Brea
Control: Signalized

Project ID: 19-01152-003
Date: 8/6/2019

Total

NS/EW Streets:	Brea Mall S Dwy				Brea Mall S Dwy				S State College Blvd				S State College Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1.5	0.5	1	0	0.5	1.5	1	0	2	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	4	0	3	0	0	0	1	0	4	35	0	1	3	80	1	0	132
7:15 AM	6	0	3	0	0	0	0	0	10	35	0	0	6	109	0	0	169
7:30 AM	9	0	5	0	0	0	4	0	6	51	1	0	3	74	0	0	153
7:45 AM	5	0	1	0	0	0	0	0	10	69	0	1	1	95	1	0	183
8:00 AM	8	0	0	0	1	0	9	0	14	58	1	0	4	68	1	0	164
8:15 AM	5	1	3	0	0	0	2	0	10	58	4	0	5	81	2	0	171
8:30 AM	6	2	3	0	1	1	5	0	16	43	5	0	9	76	3	0	170
8:45 AM	11	2	8	0	0	1	2	0	18	69	4	0	8	79	3	0	205
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	54	5	26	0	2	2	23	0	88	418	15	2	39	662	11	0	1347
APPROACH %'s :	63.53%	5.88%	30.59%	0.00%	7.41%	7.41%	85.19%	0.00%	16.83%	79.92%	2.87%	0.38%	5.48%	92.98%	1.54%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	30	5	14	0	2	2	18	0	58	228	14	0	26	304	9	0	710
PEAK HR FACTOR :	0.682	0.625	0.438	0.000	0.500	0.500	0.500	0.000	0.806	0.826	0.700	0.000	0.722	0.938	0.750	0.000	0.866
	0.583				0.550				0.824				0.942				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1.5	0.5	1	0	0.5	1.5	1	0	2	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	23	0	15	0	6	3	65	0	77	90	4	2	19	84	0	2	390
4:15 PM	35	1	24	0	5	2	76	0	79	90	5	0	18	107	6	1	449
4:30 PM	26	7	18	0	9	4	78	0	80	105	3	1	16	106	5	0	458
4:45 PM	33	1	24	0	10	4	60	0	96	99	1	1	17	89	4	2	441
5:00 PM	35	3	14	0	9	4	82	0	94	100	5	0	25	96	3	0	470
5:15 PM	36	3	16	0	3	3	68	0	88	126	7	0	21	112	5	0	488
5:30 PM	36	7	20	0	7	3	74	0	96	117	4	3	21	94	3	0	485
5:45 PM	24	5	11	0	9	2	78	0	121	131	5	1	23	92	7	0	509
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	248	27	142	0	58	25	581	0	731	858	34	8	160	780	33	5	3690
APPROACH %'s :	59.47%	6.47%	34.05%	0.00%	8.73%	3.77%	87.50%	0.00%	44.82%	52.61%	2.08%	0.49%	16.36%	79.75%	3.37%	0.51%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	131	18	61	0	28	12	302	0	399	474	21	4	90	394	18	0	1952
PEAK HR FACTOR :	0.910	0.643	0.763	0.000	0.778	0.750	0.921	0.000	0.824	0.905	0.750	0.333	0.900	0.879	0.643	0.000	0.959
	0.833				0.900				0.870				0.909				

Prepared by National Data & Surveying Services

Brea Mall S Dwy & S State College Blvd

Peak Hour Turning Movement Count

ID: 19-01152-003
City: Brea

Day: Tuesday
Date: 08/06/2019

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	07:00 AM - 09:00 AM
NONE	NONE
05:00 PM - 06:00 PM	04:00 PM - 06:00 PM

SOUTHBOUND — Brea Mall S Dwy

	L	T	R	U	Total	
AM	18	2	2	0	72	AM
NOON	0	0	0	0	0	NOON
PM	302	12	28	0	435	PM

EASTBOUND — S State College Blvd

AM	NOON	PM	
352	0	831	⇦
0	0	4	↶ 0
58	0	399	↱ 2
228	0	474	→ 2
14	0	21	↴ 0

WESTBOUND — S State College Blvd

PM	NOON	AM	
18	0	9	↰ 0
394	0	304	← 2
90	0	26	↰ 1
0	0	0	↶ 0
563	0	244	⇨

NORTHBOUND — Brea Mall S Dwy

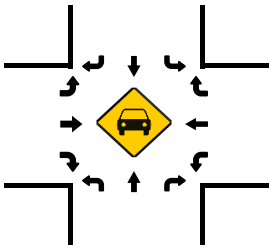
	L	T	R	U	Total	
PM	123	0	131	18	61	PM
NOON	0	0	0	0	0	NOON
AM	42	0	30	5	14	AM

CONTROL			
Signalized			
TEV	710 AM	0 NOON	1952 PM
PHF	0.87		0.96

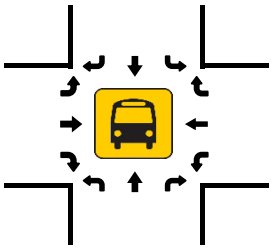
Turning movement factors: 1 | 1.5 | 0.5 | 0

Turning movement factors: 0 | 1.5 | 0.5 | 1

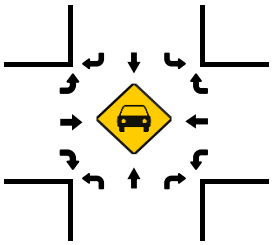
Total Vehicles (AM)



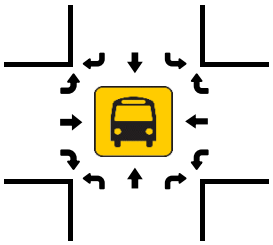
Total Vehicles (AM)



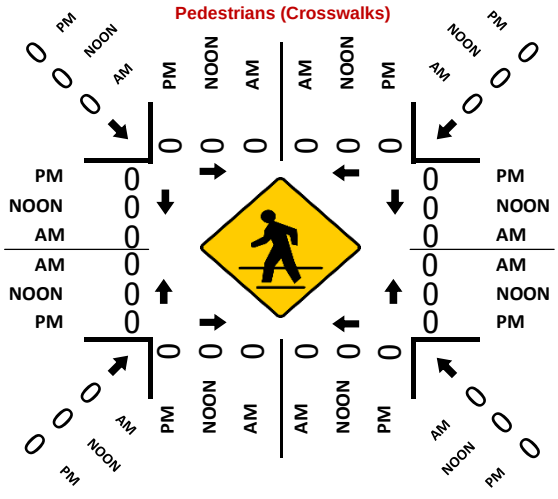
Total Vehicles (NOON)



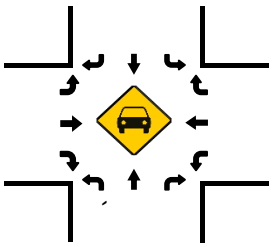
Total Vehicles (NOON)



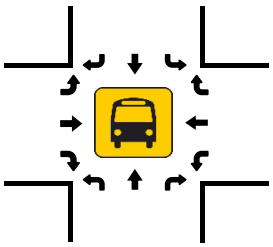
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Brea Mall S Dwy & S State College Blvd
City: Brea
Control: Signalized

Project ID: 19-01152-003
Date: 8/3/2019

Total

NS/EW Streets:	Brea Mall S Dwy				Brea Mall S Dwy				S State College Blvd				S State College Blvd				
NOON	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1.5	0.5	1	0	0.5	1.5	1	0	2	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
11:00 AM	30	5	22	0	4	7	51	1	107	92	10	1	25	81	6	0	442
11:15 AM	30	6	9	0	5	1	46	1	110	80	4	2	17	87	6	0	404
11:30 AM	34	5	18	0	3	7	65	0	126	80	5	1	31	84	7	0	466
11:45 AM	37	6	18	0	4	4	63	0	148	96	11	1	25	87	5	0	505
12:00 PM	37	10	22	0	4	8	60	0	137	96	11	0	24	112	9	0	530
12:15 PM	59	9	17	0	4	4	76	0	109	88	15	1	25	113	7	1	528
12:30 PM	35	12	21	0	8	6	70	0	143	92	6	1	23	143	6	0	566
12:45 PM	42	9	26	0	8	4	92	0	122	80	6	1	27	98	6	1	522
1:00 PM	44	9	20	0	9	3	84	0	133	79	7	0	20	125	6	0	539
1:15 PM	33	6	15	0	3	4	83	0	115	97	6	0	18	100	5	0	485
1:30 PM	37	6	24	0	11	5	95	0	133	79	11	1	19	138	6	0	565
1:45 PM	54	8	19	0	15	7	110	0	148	90	4	0	16	115	7	1	594
2:00 PM	38	8	21	0	9	7	93	0	134	87	9	0	24	124	2	0	556
2:15 PM	38	2	16	0	8	3	123	0	136	84	5	4	19	161	5	1	605
2:30 PM	30	5	30	0	9	1	96	0	124	79	10	0	20	156	7	1	568
2:45 PM	43	2	9	0	12	4	99	0	128	85	3	1	21	119	8	0	534
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	621	108	307	0	116	75	1306	2	2053	1384	123	14	354	1843	98	5	8409
APPROACH %'s :	59.94%	10.42%	29.63%	0.00%	7.74%	5.00%	87.12%	0.13%	57.44%	38.72%	3.44%	0.39%	15.39%	80.13%	4.26%	0.22%	
PEAK HR :	01:45 PM - 02:45 PM																TOTAL
PEAK HR VOL :	160	23	86	0	41	18	422	0	542	340	28	4	79	556	21	3	2323
PEAK HR FACTOR :	0.741	0.719	0.717	0.000	0.683	0.643	0.858	0.000	0.916	0.944	0.700	0.250	0.823	0.863	0.750	0.750	0.960
		0.830				0.897				0.944				0.886			

Prepared by National Data & Surveying Services

Brea Mall S Dwy & S State College Blvd

Peak Hour Turning Movement Count

ID: 19-01152-003
City: Brea

Day: Saturday
Date: 08/03/2019

PEAK HOURS	COUNT PERIODS
NONE	NONE
01:45 PM - 02:45 PM	11:00 AM - 03:00 PM
NONE	NONE

SOUTHBOUND — Brea Mall S Dwy

AM	0	0	0	0	0	AM
NOON	422	18	41	0	586	NOON
PM	0	0	0	0	0	PM

EASTBOUND — S State College Blvd

AM	NOON	PM	
0	1142	0	
0	4	0	0
0	542	0	2
0	340	0	2
0	28	0	0
AM	NOON	PM	

WESTBOUND — S State College Blvd

PM	NOON	AM	
0	21	0	0
0	556	0	2
0	79	0	1
0	3	0	0
0	470	0	
PM	NOON	AM	

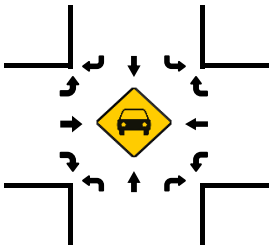
NORTHBOUND — Brea Mall S Dwy

PM	0	0	0	0	0	PM
NOON	125	0	160	23	86	NOON
AM	0	0	0	0	0	AM

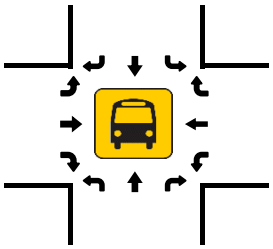
	1	1.5	0.5	0
	0	1.5	0.5	1

CONTROL			
Signalized			
TEV	0 AM	2323 NOON	0 PM
PHF		0.96	

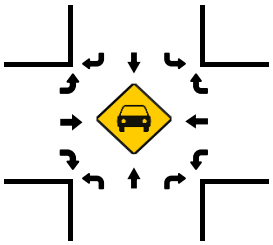
Total Vehicles (AM)



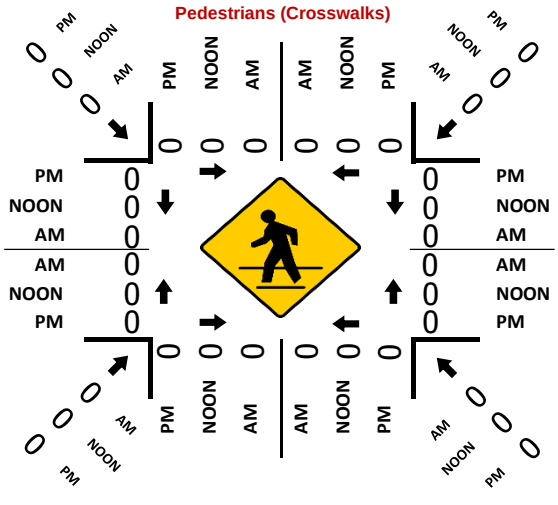
Total Vehicles (AM)



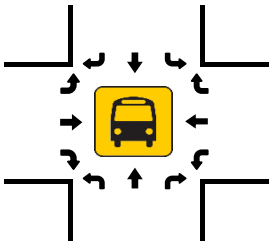
Total Vehicles (NOON)



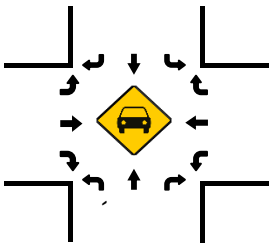
Pedestrians (Crosswalks)



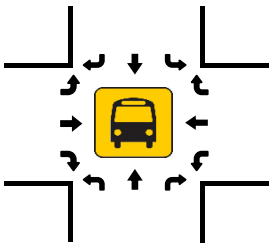
Total Vehicles (NOON)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: S Harbor Blvd & Imperial Hwy
City: Brea
Control: Signalized

Project ID: 19-01101-010
Date: 5/22/2019

Total

NS/EW Streets:	S Harbor Blvd				S Harbor Blvd				Imperial Hwy				Imperial Hwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	3	1	0	2	3	1	0	2	3	0	0	2	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	61	148	49	0	37	293	56	0	34	277	79	0	52	273	22	4	1385
7:15 AM	56	120	41	0	26	331	54	0	40	295	84	0	64	283	18	5	1417
7:30 AM	76	145	72	0	31	300	65	0	49	352	103	3	62	271	25	11	1565
7:45 AM	91	159	85	0	41	258	91	0	46	308	78	2	64	261	29	7	1520
8:00 AM	69	163	49	0	43	234	72	0	50	273	80	1	61	262	21	6	1384
8:15 AM	61	141	47	0	52	277	71	0	52	248	86	4	62	208	26	6	1341
8:30 AM	75	130	38	0	34	259	49	0	43	251	82	0	64	222	23	8	1278
8:45 AM	73	137	62	0	52	262	71	0	29	236	84	0	43	188	26	3	1266
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	562	1143	443	0	316	2214	529	0	343	2240	676	10	472	1968	190	50	11156
APPROACH %'s :	26.16%	53.21%	20.62%	0.00%	10.33%	72.38%	17.29%	0.00%	10.49%	68.52%	20.68%	0.31%	17.61%	73.43%	7.09%	1.87%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	284	572	247	0	135	1182	266	0	169	1232	344	5	242	1088	94	27	5887
PEAK HR FACTOR :	0.780	0.899	0.726	0.000	0.823	0.893	0.731	0.000	0.862	0.875	0.835	0.417	0.945	0.961	0.810	0.614	0.940
	0.823				0.963				0.863				0.980				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	3	1	0	2	3	1	0	2	3	0	0	2	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	76	248	50	0	36	183	31	0	65	270	69	0	94	341	54	5	1522
4:15 PM	97	285	44	0	43	200	67	0	58	282	49	0	58	299	57	4	1543
4:30 PM	102	253	59	0	29	217	50	0	70	259	75	3	111	347	56	5	1636
4:45 PM	93	273	54	0	40	212	57	0	67	289	71	1	83	361	45	4	1650
5:00 PM	92	266	48	0	48	201	76	0	60	266	72	0	89	352	63	4	1637
5:15 PM	103	284	44	0	45	190	78	0	63	263	64	0	108	369	53	7	1671
5:30 PM	118	216	55	0	52	208	80	0	61	307	66	3	102	337	45	8	1658
5:45 PM	99	210	70	0	49	199	50	0	44	279	76	1	64	363	47	5	1556
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	780	2035	424	0	342	1610	489	0	488	2215	542	8	709	2769	420	42	12873
APPROACH %'s :	24.08%	62.83%	13.09%	0.00%	14.01%	65.96%	20.03%	0.00%	15.00%	68.09%	16.66%	0.25%	17.99%	70.28%	10.66%	1.07%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	406	1039	201	0	185	811	291	0	251	1125	273	4	382	1419	206	23	6616
PEAK HR FACTOR :	0.860	0.915	0.914	0.000	0.889	0.956	0.909	0.000	0.937	0.916	0.948	0.333	0.884	0.961	0.817	0.719	0.990
	0.955				0.946				0.946				0.945				

Prepared by National Data & Surveying Services

S Harbor Blvd & Imperial Hwy

Peak Hour Turning Movement Count

ID: 19-01101-010
City: Brea

Day: Wednesday
Date: 05/22/2019

PEAK HOURS

AM	07:00 AM - 08:00 AM
NOON	NONE
PM	04:45 PM - 05:45 PM

COUNT PERIODS

AM	07:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 06:00 PM

S Harbor Blvd — SOUTHBOUND

	1	3	2	0	
AM	266	1182	135	0	835 AM
NOON	0	0	0	0	0 NOON
PM	291	811	185	0	1496 PM

Imperial Hwy — EASTBOUND

AM	NOON	PM		
1643	0	2120	⇦	
5	0	4	↶	0
169	0	251	↱	2
1232	0	1125	→	3
344	0	273	↴	0
AM	NOON	PM		

CONTROL

Signalized

TEV	5887 AM	0 NOON	6616 PM
PHF	0.94		0.99

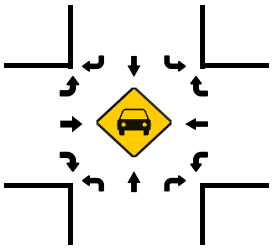
Imperial Hwy — WESTBOUND

PM	NOON	AM		
206	0	94	↰	1
1419	0	1088	←	3
382	0	242	↰	2
23	0	27	↶	0
1534	0	1641	⇨	
PM	NOON	AM		

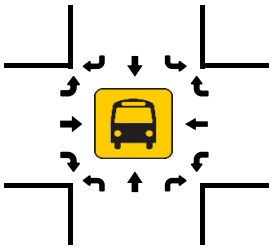
S Harbor Blvd — NORTHBOUND

	0	2	3	1	
PM	1466	0	406	1039	201 PM
NOON	0	0	0	0	0 NOON
AM	1768	0	284	572	247 AM

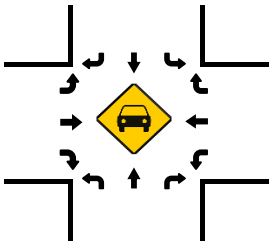
Total Vehicles (AM)



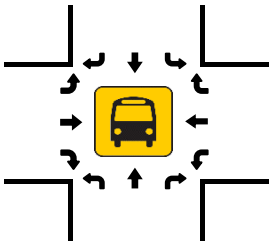
Total Vehicles (AM)



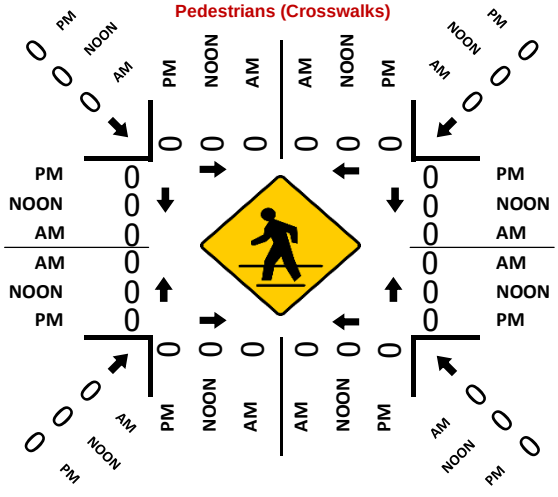
Total Vehicles (NOON)



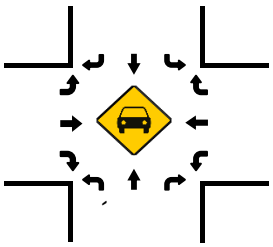
Total Vehicles (NOON)



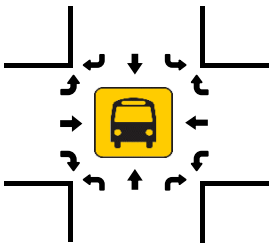
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: S Harbor Blvd & Imperial Hwy
City: Brea
Control: Signalized

Project ID: 19-01101-010
Date: 5/18/2019

Total

NS/EW Streets:	S Harbor Blvd				S Harbor Blvd				Imperial Hwy				Imperial Hwy				
NOON	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2 NL	3 NT	1 NR	0 NU	2 SL	3 ST	1 SR	0 SU	2 EL	3 ET	0 ER	0 EU	2 WL	3 WT	1 WR	0 WU	TOTAL
11:00 AM	63	159	29	0	46	148	61	0	80	247	55	1	62	193	29	1	1174
11:15 AM	96	133	57	0	40	146	66	0	64	250	70	5	76	187	36	9	1235
11:30 AM	78	132	41	0	52	179	60	0	58	223	60	3	43	192	39	6	1166
11:45 AM	74	154	50	0	49	170	63	1	68	271	63	1	62	220	46	9	1301
12:00 PM	72	173	53	1	46	176	66	0	81	259	66	6	71	288	49	17	1424
12:15 PM	83	193	55	7	52	170	72	0	72	251	68	2	67	296	31	18	1437
12:30 PM	87	162	42	0	47	205	57	0	68	278	64	1	80	287	38	3	1419
12:45 PM	77	182	39	0	51	187	62	0	68	253	61	2	67	268	46	6	1369
1:00 PM	85	181	43	1	47	184	55	0	59	225	51	2	62	227	43	9	1274
1:15 PM	60	150	55	0	47	220	48	1	66	266	55	2	59	239	42	6	1316
1:30 PM	74	146	33	0	51	207	66	2	68	223	58	3	79	247	41	8	1306
1:45 PM	76	160	45	0	45	187	75	0	75	240	65	1	76	285	50	3	1383
2:00 PM	61	169	34	1	49	206	57	0	72	254	55	1	52	258	39	7	1315
2:15 PM	77	175	49	0	45	177	52	1	65	221	71	1	60	262	48	6	1310
2:30 PM	79	181	46	0	47	217	51	0	65	253	67	0	50	267	35	6	1364
2:45 PM	71	152	42	0	53	174	56	0	46	231	62	3	49	314	37	8	1298
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1213	2602	713	10	767	2953	967	5	1075	3945	991	34	1015	4030	649	122	21091
APPROACH %'s :	26.73%	57.34%	15.71%	0.22%	16.35%	62.94%	20.61%	0.11%	17.78%	65.26%	16.39%	0.56%	17.45%	69.29%	11.16%	2.10%	
PEAK HR :	12:00 PM - 01:00 PM																TOTAL
PEAK HR VOL :	319	710	189	8	196	738	257	0	289	1041	259	11	285	1139	164	44	5649
PEAK HR FACTOR :	0.917	0.920	0.859	0.286	0.942	0.900	0.892	0.000	0.892	0.936	0.952	0.458	0.891	0.962	0.837	0.611	0.983
	0.907				0.964				0.971				0.960				

Prepared by National Data & Surveying Services

S Harbor Blvd & Imperial Hwy

Peak Hour Turning Movement Count

ID: 19-01101-010
City: Brea

Day: Saturday
Date: 05/18/2019

PEAK HOURS	COUNT PERIODS
NONE	NONE
12:00 PM - 01:00 PM	11:00 AM - 03:00 PM
NONE	NONE

S Harbor Blvd — SOUTHBOUND

AM	0	0	0	0	0	AM
NOON	257	738	196	0	1163	NOON
PM	0	0	0	0	0	PM

Imperial Hwy — EASTBOUND

AM	NOON	PM		
0	1726	0	⇦	
0	11	0	↶	0
0	289	0	↱	2
0	1041	0	→	3
0	259	0	↴	0
AM	NOON	PM		

Imperial Hwy — WESTBOUND

PM	NOON	AM		
0	164	0	↰	1
0	1139	0	←	3
0	285	0	↰	2
0	44	0	↶	0
0	1470	0	⇨	
PM	NOON	AM		

	1	3	2	0

	0	2	3	1

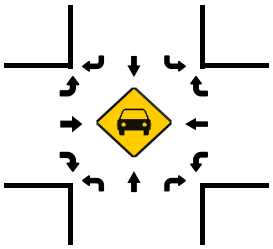
CONTROL: Signalized

TEV	0 AM	5649 NOON	0 PM
PHF		0.98	

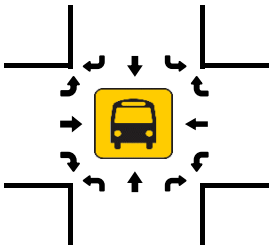
S Harbor Blvd — NORTHBOUND

PM	0	0	0	0	0	PM
NOON	1290	8	319	710	189	NOON
AM	0	0	0	0	0	AM

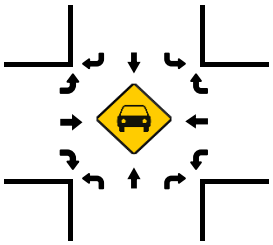
Total Vehicles (AM)



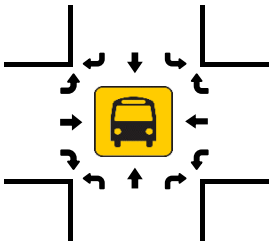
Total Vehicles (AM)



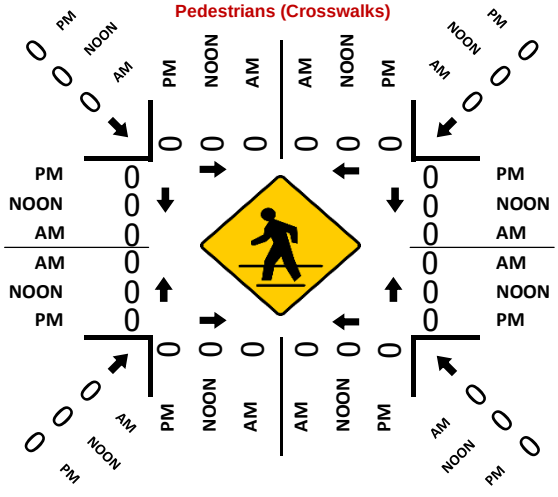
Total Vehicles (NOON)



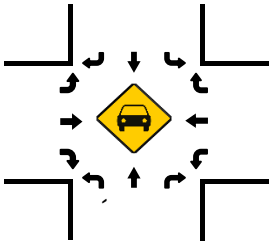
Total Vehicles (NOON)



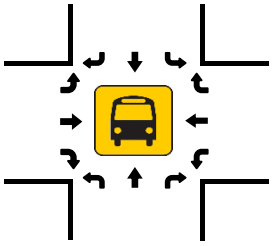
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: S Puente St & Imperial Hwy
City: Brea
Control: Signalized

Project ID: 19-01101-011
Date: 5/22/2019

Total

NS/EW Streets:	S Puente St				S Puente St				Imperial Hwy				Imperial Hwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	0	1	2	1	0	1	3	0	0	1	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	7	13	24	0	23	7	36	2	39	274	1	0	12	238	32	3	711
7:15 AM	8	21	33	0	24	13	34	0	36	298	12	0	3	294	34	3	813
7:30 AM	14	20	50	0	24	25	36	0	43	350	13	0	17	264	31	0	887
7:45 AM	13	34	29	0	34	30	30	0	81	324	34	0	13	289	42	0	953
8:00 AM	21	33	32	0	31	12	27	0	48	276	15	0	4	289	41	6	835
8:15 AM	16	16	16	0	36	9	25	1	40	305	6	0	17	246	32	2	767
8:30 AM	10	18	19	0	21	9	27	0	14	297	2	0	12	242	29	2	702
8:45 AM	10	7	17	0	32	10	30	0	24	266	6	0	12	215	33	1	663
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	99	162	220	0	225	115	245	3	325	2390	89	0	90	2077	274	17	6331
APPROACH %'s :	20.58%	33.68%	45.74%	0.00%	38.27%	19.56%	41.67%	0.51%	11.59%	85.24%	3.17%	0.00%	3.66%	84.50%	11.15%	0.69%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	56	108	144	0	113	80	127	0	208	1248	74	0	37	1136	148	9	3488
PEAK HR FACTOR :	0.667	0.794	0.720	0.000	0.831	0.667	0.882	0.000	0.642	0.891	0.544	0.000	0.544	0.966	0.881	0.375	0.915
	0.895				0.851				0.871				0.967				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	0	1	2	1	0	1	3	0	0	1	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	9	10	15	0	40	20	52	1	29	335	6	0	20	403	48	7	995
4:15 PM	6	13	20	0	25	13	34	0	23	334	4	0	31	394	70	3	970
4:30 PM	7	9	15	0	26	33	45	2	39	339	8	0	18	375	51	2	969
4:45 PM	9	13	20	0	38	17	40	0	22	329	5	0	24	368	52	8	945
5:00 PM	8	8	16	0	51	30	83	2	25	343	14	0	29	429	54	3	1095
5:15 PM	9	15	24	0	32	19	26	1	33	332	8	0	10	382	80	2	973
5:30 PM	5	7	19	0	21	22	35	0	37	316	10	0	8	355	79	1	915
5:45 PM	6	13	18	0	24	14	29	0	28	313	6	0	18	407	74	0	950
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	59	88	147	0	257	168	344	6	236	2641	61	0	158	3113	508	26	7812
APPROACH %'s :	20.07%	29.93%	50.00%	0.00%	33.16%	21.68%	44.39%	0.77%	8.03%	89.89%	2.08%	0.00%	4.15%	81.81%	13.35%	0.68%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	33	45	75	0	147	99	194	5	119	1343	35	0	81	1554	237	15	3982
PEAK HR FACTOR :	0.917	0.750	0.781	0.000	0.721	0.750	0.584	0.625	0.763	0.979	0.625	0.000	0.698	0.906	0.741	0.469	0.909
	0.797				0.670				0.970				0.916				

Prepared by National Data & Surveying Services

S Puente St & Imperial Hwy

Peak Hour Turning Movement Count

ID: 19-01101-011
City: Brea

Day: Wednesday
Date: 05/22/2019

PEAK HOURS

AM: 07:15 AM - 08:15 AM
NOON: NONE
PM: 04:30 PM - 05:30 PM

COUNT PERIODS

AM: 07:00 AM - 09:00 AM
NOON: NONE
PM: 04:00 PM - 06:00 PM

S Puente St — SOUTHBOUND

AM	127	80	113	0	464	AM
NOON	0	0	0	0	0	NOON
PM	194	99	147	5	406	PM

Imperial Hwy — EASTBOUND

AM	NOON	PM		
1319	0	1781	⇦	
0	0	0	↶	0
208	0	119	↱	1
1248	0	1343	→	3
74	0	35	↳	0
AM	NOON	PM		

Imperial Hwy — WESTBOUND

PM	NOON	AM		
237	0	148	↰	1
1554	0	1136	←	3
81	0	37	↰	1
15	0	9	↶	0
1580	0	1514	⇨	
PM	NOON	AM		

CONTROL

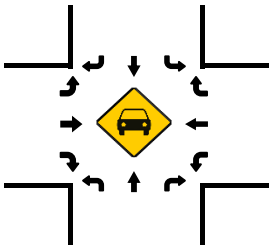
Signalized

TEV	3488	0	3982
	AM	NOON	PM
PHF	0.92		0.91

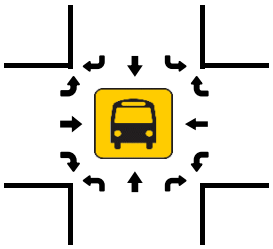
S Puente St — NORTHBOUND

PM	215	0	33	45	75	PM
NOON	0	0	0	0	0	NOON
AM	191	0	56	108	144	AM

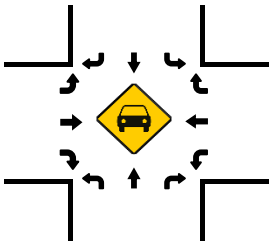
Total Vehicles (AM)



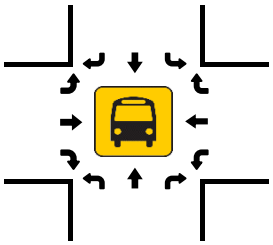
Total Vehicles (AM)



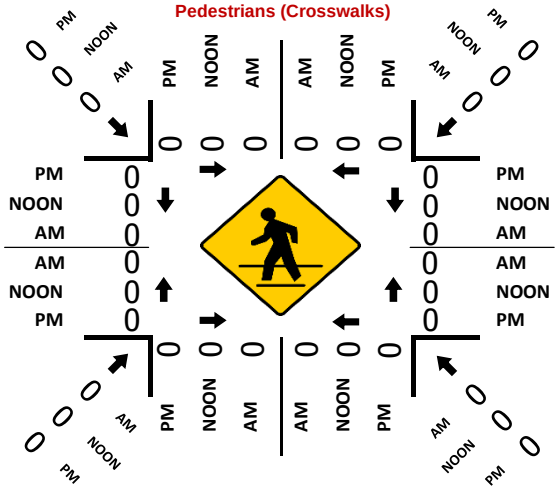
Total Vehicles (NOON)



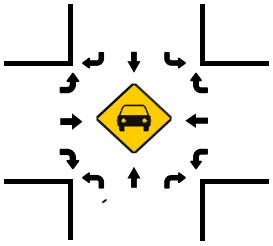
Total Vehicles (NOON)



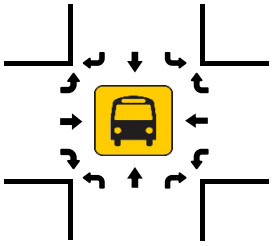
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: S Puente St & Imperial Hwy
City: Brea
Control: Signalized

Project ID: 19-01101-011
Date: 5/18/2019

Total

NS/EW Streets:	S Puente St				S Puente St				Imperial Hwy				Imperial Hwy				
NOON	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	0	1	2	1	0	1	3	0	0	1	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
11:00 AM	10	11	34	0	19	11	13	1	10	243	9	1	18	210	19	1	610
11:15 AM	7	9	37	0	32	13	17	0	15	271	8	0	13	240	24	2	688
11:30 AM	6	9	18	0	24	8	27	0	30	247	9	0	22	190	27	1	618
11:45 AM	11	5	27	0	18	13	26	1	17	298	10	2	13	277	29	1	748
12:00 PM	5	7	15	0	34	13	36	1	17	296	11	0	12	309	25	2	783
12:15 PM	4	10	26	0	25	6	18	0	17	295	6	2	20	328	43	4	804
12:30 PM	5	7	19	0	30	8	29	1	11	305	7	0	15	319	40	4	800
12:45 PM	7	7	22	0	17	11	25	0	16	296	6	1	11	273	23	2	717
1:00 PM	6	7	19	0	29	10	20	0	14	271	6	0	11	303	23	2	721
1:15 PM	5	4	24	0	14	6	11	0	27	294	2	0	11	300	21	3	722
1:30 PM	4	6	11	0	29	8	29	0	18	293	3	1	6	296	24	2	730
1:45 PM	10	12	22	0	22	10	19	0	14	273	5	0	14	319	17	2	739
2:00 PM	6	11	28	0	14	18	26	0	11	274	13	1	22	303	27	2	756
2:15 PM	11	6	18	0	27	8	22	0	19	259	10	1	12	288	31	0	712
2:30 PM	7	9	17	0	22	13	30	0	16	289	9	2	19	300	24	2	759
2:45 PM	11	11	21	0	24	13	24	0	8	259	4	2	13	281	15	2	688
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	115	131	358	0	380	169	372	4	260	4463	118	13	232	4536	412	32	11595
APPROACH %'s :	19.04%	21.69%	59.27%	0.00%	41.08%	18.27%	40.22%	0.43%	5.36%	91.94%	2.43%	0.27%	4.45%	87.03%	7.90%	0.61%	
PEAK HR :	11:45 AM - 12:45 PM																TOTAL
PEAK HR VOL :	25	29	87	0	107	40	109	3	62	1194	34	4	60	1233	137	11	3135
PEAK HR FACTOR :	0.568	0.725	0.806	0.000	0.787	0.769	0.757	0.750	0.912	0.979	0.773	0.500	0.750	0.940	0.797	0.688	0.975
		0.820				0.771				0.989				0.912			

Prepared by National Data & Surveying Services

S Puente St & Imperial Hwy

Peak Hour Turning Movement Count

ID: 19-01101-011
City: Brea

Day: Saturday
Date: 05/18/2019

PEAK HOURS	COUNT PERIODS
NONE	NONE
11:45 AM - 12:45 PM	11:00 AM - 03:00 PM
NONE	NONE

CONTROL: Signalized

	AM	NOON	PM
TEV	0	3135	0
PHF		0.97	

S Puente St — SOUTHBOUND

AM	0	0	0	0	0	AM
NOON	109	40	107	3	231	NOON
PM	0	0	0	0	0	PM
	1	2	1	0		

Imperial Hwy — EASTBOUND

AM	NOON	PM	
0	1371	0	
0	4	0	0
0	62	0	1
0	1194	0	3
0	34	0	0
AM	NOON	PM	

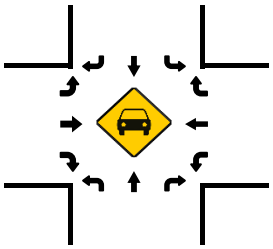
Imperial Hwy — WESTBOUND

PM	NOON	AM	
0	137	0	1
0	1233	0	3
0	60	0	1
0	11	0	0
0	1399	0	
PM	NOON	AM	

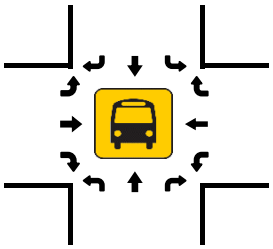
S Puente St — NORTHBOUND

	0	1	1	1		
PM	0	0	0	0	0	PM
NOON	134	0	25	29	87	NOON
AM	0	0	0	0	0	AM

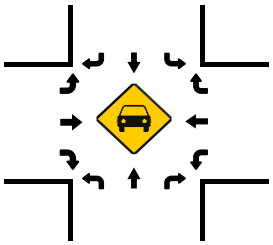
Total Vehicles (AM)



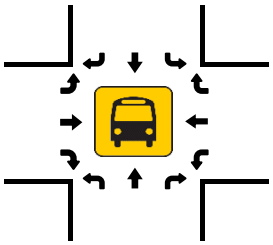
Total Vehicles (AM)



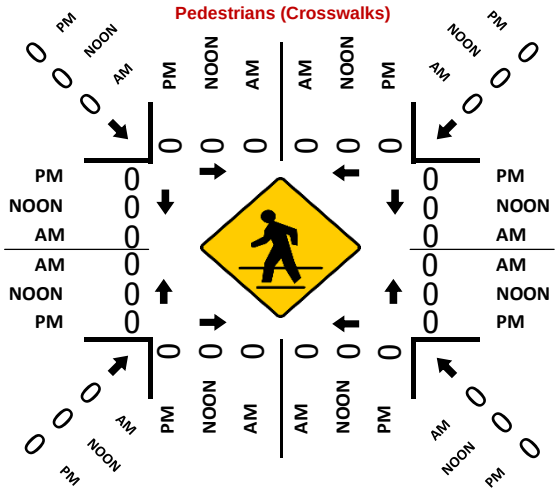
Total Vehicles (NOON)



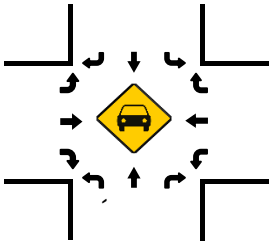
Total Vehicles (NOON)



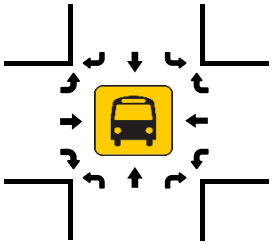
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: S Brea Blvd & Imperial Hwy
City: Brea
Control: Signalized

Project ID: 19-01101-012
Date: 5/22/2019

Total

NS/EW Streets:	S Brea Blvd				S Brea Blvd				Imperial Hwy				Imperial Hwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	3	1	0	2	2	1	0	2	3	1	0	2	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	60	60	33	0	25	214	27	1	6	309	64	1	29	280	10	0	1119
7:15 AM	89	70	21	1	17	237	36	0	17	342	46	5	37	333	10	1	1262
7:30 AM	106	99	39	3	28	222	32	1	28	388	84	4	25	331	12	0	1402
7:45 AM	122	145	37	0	34	206	50	2	31	359	102	2	42	380	19	2	1533
8:00 AM	85	116	35	0	38	234	37	0	33	314	97	4	31	295	19	3	1341
8:15 AM	81	94	34	1	31	228	41	5	20	340	66	2	30	272	15	0	1260
8:30 AM	74	110	38	1	33	234	37	1	16	330	61	1	39	248	16	0	1239
8:45 AM	84	96	57	1	36	216	30	2	25	244	89	3	42	279	15	1	1220
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	701	790	294	7	242	1791	290	12	176	2626	609	22	275	2418	116	7	10376
APPROACH %'s :	39.12%	44.08%	16.41%	0.39%	10.36%	76.70%	12.42%	0.51%	5.13%	76.49%	17.74%	0.64%	9.77%	85.87%	4.12%	0.25%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	402	430	132	4	117	899	155	3	109	1403	329	15	135	1339	60	6	5538
PEAK HR FACTOR :	0.824	0.741	0.846	0.333	0.770	0.948	0.775	0.375	0.826	0.904	0.806	0.750	0.804	0.881	0.789	0.500	0.903
	0.796				0.950				0.921				0.869				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	3	1	0	2	2	1	0	2	3	1	0	2	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	103	154	44	4	25	125	37	2	34	334	77	2	54	362	17	0	1374
4:15 PM	88	180	56	2	29	142	53	4	38	354	88	0	51	404	26	2	1517
4:30 PM	99	191	51	0	38	130	41	3	48	348	96	2	44	367	31	1	1490
4:45 PM	99	167	47	1	53	123	35	4	57	359	95	3	51	375	24	1	1494
5:00 PM	120	184	56	1	49	146	46	5	48	383	100	3	64	399	35	0	1639
5:15 PM	108	197	45	1	44	172	33	7	36	400	99	2	53	386	36	0	1619
5:30 PM	113	195	65	1	34	143	47	1	38	379	85	1	55	395	26	1	1579
5:45 PM	136	188	57	0	47	138	41	8	42	394	102	8	30	411	34	1	1637
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	866	1456	421	10	319	1119	333	34	341	2951	742	21	402	3099	229	6	12349
APPROACH %'s :	31.46%	52.89%	15.29%	0.36%	17.67%	61.99%	18.45%	1.88%	8.41%	72.77%	18.30%	0.52%	10.76%	82.95%	6.13%	0.16%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	477	764	223	3	174	599	167	21	164	1556	386	14	202	1591	131	2	6474
PEAK HR FACTOR :	0.877	0.970	0.858	0.750	0.888	0.871	0.888	0.656	0.854	0.973	0.946	0.438	0.789	0.968	0.910	0.500	0.987
	0.963				0.938				0.971				0.967				

Prepared by National Data & Surveying Services

S Brea Blvd & Imperial Hwy

Peak Hour Turning Movement Count

ID: 19-01101-012
City: Brea

Day: Wednesday
Date: 05/22/2019

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NONE	NONE
05:00 PM - 06:00 PM	04:00 PM - 06:00 PM

S Brea Blvd — SOUTHBOUND

AM	155	899	117	3	602	AM
NOON	0	0	0	0	0	NOON
PM	167	599	174	21	1080	PM
	1	2	2	0		

Imperial Hwy — EASTBOUND

AM	NOON	PM	
1911	0	2249	
15	0	14	0
109	0	164	2
1403	0	1556	3
329	0	386	1
AM	NOON	PM	

CONTROL

Signalized

TEV	5538 AM	0 NOON	6474 PM
PHF	0.90		0.99

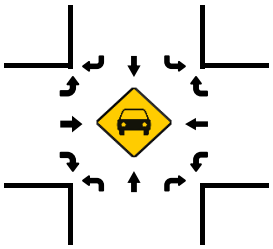
Imperial Hwy — WESTBOUND

PM	NOON	AM	
131	0	60	1
1591	0	1339	3
202	0	135	2
2	0	6	0
1955	0	1658	
PM	NOON	AM	

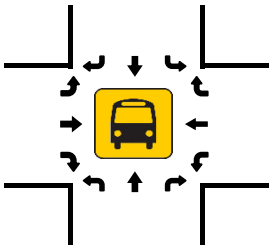
	0	2	3	1		
PM	1190	3	477	764	223	PM
NOON	0	0	0	0	0	NOON
AM	1367	4	402	430	132	AM

S Brea Blvd — NORTHBOUND

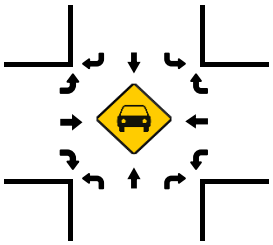
Total Vehicles (AM)



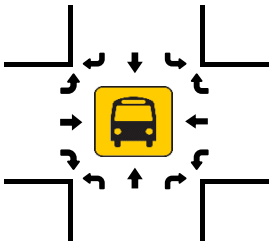
Total Vehicles (AM)



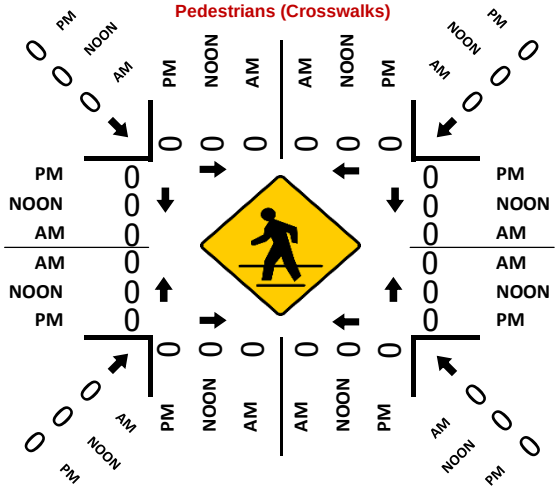
Total Vehicles (NOON)



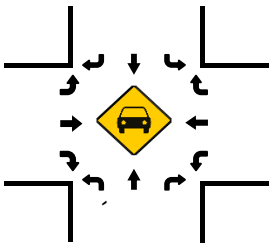
Total Vehicles (NOON)



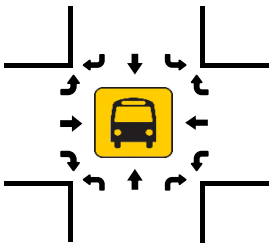
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Brea Blvd & Imperial Hwy
City: Brea
Control: Signalized

Project ID: 19-01133-012
Date: 6/29/2019

Total

NS/EW Streets:	Brea Blvd				Brea Blvd				Imperial Hwy				Imperial Hwy				
NOON	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2 NL	3 NT	1 NR	0 NU	2 SL	2 ST	1 SR	0 SU	2 EL	3 ET	1 ER	0 EU	2 WL	3 WT	1 WR	0 WU	TOTAL
11:00 AM	65	112	80	3	42	109	34	0	22	302	58	2	74	200	31	3	1137
11:15 AM	82	109	78	1	50	103	37	2	33	237	49	5	60	235	32	3	1116
11:30 AM	115	96	69	3	42	110	35	3	32	321	73	2	59	274	34	4	1272
11:45 AM	82	108	60	3	66	117	29	1	19	263	73	4	68	251	37	3	1184
12:00 PM	93	114	84	1	56	105	50	3	26	310	91	4	83	270	36	6	1332
12:15 PM	99	86	63	4	46	119	45	2	48	296	65	3	57	240	32	12	1217
12:30 PM	77	127	64	3	60	122	40	2	25	359	100	1	66	299	31	7	1383
12:45 PM	83	104	58	2	47	129	43	3	31	280	83	3	91	233	24	5	1219
1:00 PM	92	123	65	8	49	210	35	4	44	299	70	2	93	329	39	7	1469
1:15 PM	92	121	57	6	58	225	42	2	45	333	58	3	57	282	38	9	1428
1:30 PM	86	109	62	4	69	201	47	3	46	348	71	1	64	310	30	6	1457
1:45 PM	87	96	52	5	60	151	41	2	24	311	44	3	65	302	31	5	1279
2:00 PM	80	87	51	3	57	129	43	3	39	264	67	0	58	260	26	8	1175
2:15 PM	76	99	69	4	78	131	41	4	34	284	64	2	58	305	29	11	1289
2:30 PM	88	91	45	4	53	143	50	2	26	290	64	2	57	290	27	3	1235
2:45 PM	88	86	55	2	49	103	33	2	34	278	65	1	71	304	40	4	1215
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1385	1668	1012	56	882	2207	645	38	528	4775	1095	38	1081	4384	517	96	20407
APPROACH %'s :	33.61%	40.48%	24.56%	1.36%	23.38%	58.51%	17.10%	1.01%	8.20%	74.19%	17.01%	0.59%	17.79%	72.13%	8.51%	1.58%	
PEAK HR :	01:00 PM - 02:00 PM																TOTAL
PEAK HR VOL :	357	449	236	23	236	787	165	11	159	1291	243	9	279	1223	138	27	5633
PEAK HR FACTOR :	0.970	0.913	0.908	0.719	0.855	0.874	0.878	0.688	0.864	0.927	0.856	0.750	0.750	0.929	0.885	0.750	0.959
	0.924				0.917				0.913				0.890				

Prepared by National Data & Surveying Services

Brea Blvd & Imperial Hwy

Peak Hour Turning Movement Count

ID: 19-01133-012
City: Brea

Day: Saturday
Date: 06/29/2019

PEAK HOURS	COUNT PERIODS
NONE	NONE
01:00 PM - 02:00 PM	11:00 AM - 03:00 PM
NONE	NONE

Brea Blvd

SOUTHBOUND

AM	0	0	0	0	0	AM
NOON	165	787	236	11	757	NOON
PM	0	0	0	0	0	PM

1 2 2 0

EASTBOUND (Imperial Hwy)

AM	NOON	PM	
0	1754	0	
0	9	0	0
0	159	0	2
0	1291	0	3
0	243	0	1
AM	NOON	PM	

WESTBOUND (Imperial Hwy)

PM	NOON	AM	
0	138	0	1
0	1223	0	3
0	279	0	2
0	27	0	0
0	1790	0	
PM	NOON	AM	

CONTROL
Signalized

TEV	0 AM	5633 NOON	0 PM
PHF		0.96	

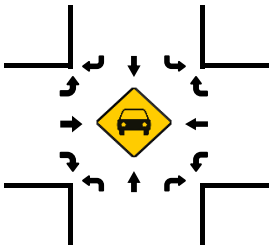
0 2 3 1

PM	0	0	0	0	PM
NOON	1332	23	357	449	236	NOON
AM	0	0	0	0	0	AM

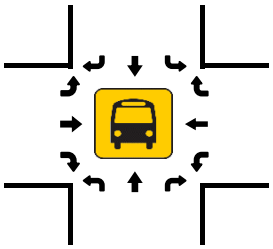
NORTHBOUND

Brea Blvd

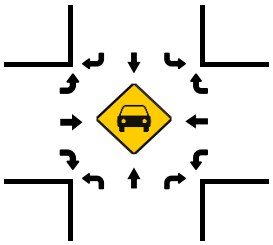
Total Vehicles (AM)



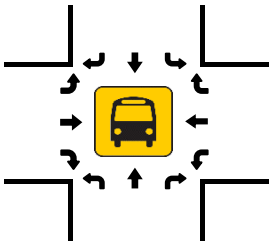
Total Vehicles (AM)



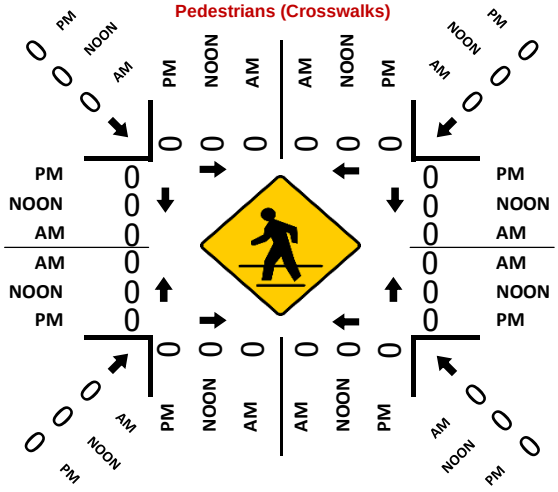
Total Vehicles (NOON)



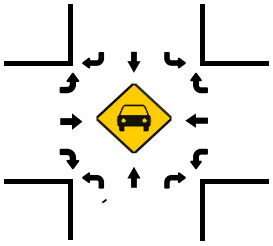
Total Vehicles (NOON)



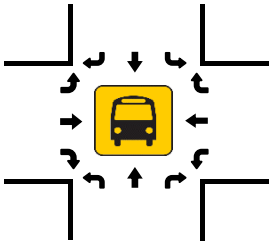
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: S Randolph Ave & Imperial Hwy
City: Brea
Control: Signalized

Project ID: 19-01101-013
Date: 5/22/2019

Total

NS/EW Streets:	S Randolph Ave				S Randolph Ave				Imperial Hwy				Imperial Hwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1.5	1	0.5	0	2	0.5	0.5	0	2	3	0	0	1	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	2	2	5	0	27	5	9	0	7	350	1	1	2	267	25	0	703
7:15 AM	3	3	11	0	36	4	8	0	8	350	1	0	5	339	18	1	787
7:30 AM	2	3	15	0	22	4	3	0	10	406	2	1	5	355	35	1	864
7:45 AM	2	2	11	0	28	2	3	0	12	356	3	2	6	402	48	1	878
8:00 AM	7	5	13	0	33	3	9	0	12	332	3	2	4	300	35	0	758
8:15 AM	10	4	7	0	34	4	9	0	10	374	1	0	4	283	34	1	775
8:30 AM	6	4	10	0	20	5	10	0	21	348	2	4	7	279	46	0	762
8:45 AM	5	2	9	0	22	3	18	0	15	290	5	2	8	332	61	2	774
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	37	25	81	0	222	30	69	0	95	2806	18	12	41	2557	302	6	6301
APPROACH %'s :	25.87%	17.48%	56.64%	0.00%	69.16%	9.35%	21.50%	0.00%	3.24%	95.74%	0.61%	0.41%	1.41%	87.99%	10.39%	0.21%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	14	13	50	0	119	13	23	0	42	1444	9	5	20	1396	136	3	3287
PEAK HR FACTOR :	0.500	0.650	0.833	0.000	0.826	0.813	0.639	0.000	0.875	0.889	0.750	0.625	0.833	0.868	0.708	0.750	0.936
	0.770				0.807				0.895				0.851				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1.5	1	0.5	0	2	0.5	0.5	0	2	3	0	0	1	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	12	4	14	0	55	1	41	0	29	337	2	1	11	383	59	0	949
4:15 PM	7	3	9	0	59	3	37	0	37	355	2	4	8	395	66	1	986
4:30 PM	3	4	9	0	76	5	25	0	43	335	5	2	7	413	75	0	1002
4:45 PM	9	6	17	0	50	8	31	0	41	360	7	2	11	430	70	0	1042
5:00 PM	8	7	9	0	81	4	55	0	38	384	7	1	8	457	71	2	1132
5:15 PM	10	10	13	0	70	7	34	1	45	382	5	0	13	479	66	1	1136
5:30 PM	13	6	16	0	78	7	46	0	63	358	8	2	9	468	70	1	1145
5:45 PM	10	8	18	0	69	5	37	0	59	393	6	1	19	349	100	0	1074
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	72	48	105	0	538	40	306	1	355	2904	42	13	86	3374	577	5	8466
APPROACH %'s :	32.00%	21.33%	46.67%	0.00%	60.79%	4.52%	34.58%	0.11%	10.71%	87.63%	1.27%	0.39%	2.13%	83.47%	14.28%	0.12%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	41	31	56	0	298	23	172	1	205	1517	26	4	49	1753	307	4	4487
PEAK HR FACTOR :	0.788	0.775	0.778	0.000	0.920	0.821	0.782	0.250	0.813	0.965	0.813	0.500	0.645	0.915	0.768	0.500	0.980
	0.889				0.882				0.954				0.945				

Prepared by National Data & Surveying Services

S Randolph Ave & Imperial Hwy

Peak Hour Turning Movement Count

ID: 19-01101-013
City: Brea

Day: Wednesday
Date: 05/22/2019

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NONE	NONE
05:00 PM - 06:00 PM	04:00 PM - 06:00 PM

S Randolph Ave — SOUTHBOUND

AM	23	13	119	0	191	AM
NOON	0	0	0	0	0	NOON
PM	172	23	298	1	544	PM
	0.5	0.5	2	0		

EASTBOUND — Imperial Hwy

AM	NOON	PM	
1438	0	1970	⇦
5	0	4	↶ 0
42	0	205	↱ 2
1444	0	1517	→ 3
9	0	26	↷ 0
AM	NOON	PM	

WESTBOUND — Imperial Hwy

PM	NOON	AM	
307	0	136	1 ↰
1753	0	1396	3 ←
49	0	20	1 ↰
4	0	3	0 ↶
1875	0	1616	⇨
PM	NOON	AM	

0 1.5 1 0.5

CONTROL

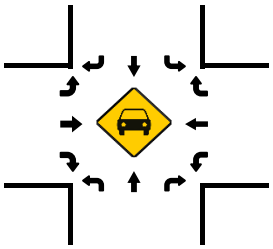
Signalized

TEV	3287	0	4487
	AM	NOON	PM
PHF	0.94		0.98

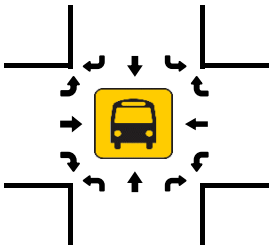
NORTHBOUND — S Randolph Ave

PM	98	0	41	31	56	PM
NOON	0	0	0	0	0	NOON
AM	42	0	14	13	50	AM

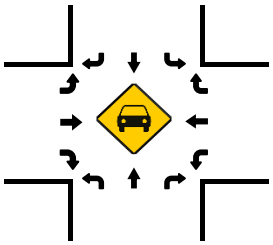
Total Vehicles (AM)



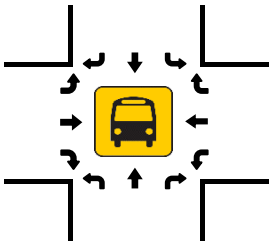
Total Vehicles (AM)



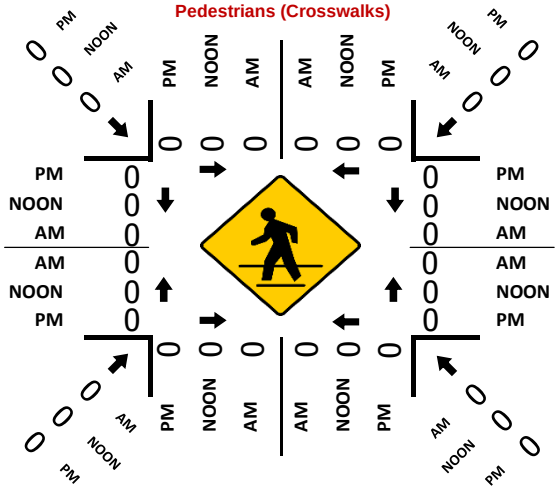
Total Vehicles (NOON)



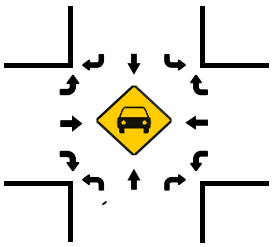
Total Vehicles (NOON)



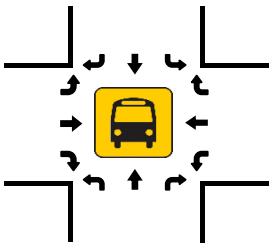
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: S Randolph Ave & Imperial Hwy
City: Brea
Control: Signalized

Project ID: 19-01101-013
Date: 5/18/2019

Total

NS/EW Streets:	S Randolph Ave				S Randolph Ave				Imperial Hwy				Imperial Hwy				
NOON	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1.5	1	0.5	0	2	0.5	0.5	0	2	3	0	0	1	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
11:00 AM	12	9	18	0	67	11	33	0	55	315	8	9	29	324	105	1	996
11:15 AM	11	16	30	0	59	10	38	0	59	353	6	5	28	281	116	3	1015
11:30 AM	13	13	30	0	71	15	24	0	60	331	7	14	29	361	124	2	1094
11:45 AM	16	5	25	0	76	10	46	0	68	299	3	4	34	378	117	2	1083
12:00 PM	14	9	27	0	72	14	49	2	64	332	8	1	17	356	118	3	1086
12:15 PM	18	5	38	0	72	5	40	0	53	336	11	5	45	351	108	4	1091
12:30 PM	17	15	33	0	70	10	52	0	70	353	5	8	32	362	115	3	1145
12:45 PM	13	9	41	0	79	12	43	0	62	324	13	4	26	370	105	0	1101
1:00 PM	17	13	31	0	103	17	55	0	75	307	3	4	27	350	118	2	1122
1:15 PM	16	10	40	0	88	16	50	0	47	332	7	4	26	378	101	3	1118
1:30 PM	16	11	38	0	105	22	64	0	63	326	5	1	21	357	115	2	1146
1:45 PM	18	7	55	0	83	17	58	0	78	346	8	4	26	368	101	8	1177
2:00 PM	14	8	31	0	103	17	65	0	58	350	10	1	16	384	112	2	1171
2:15 PM	15	6	39	0	86	27	63	0	69	324	6	0	16	330	95	1	1077
2:30 PM	16	4	30	0	83	10	60	0	63	331	2	4	22	378	94	4	1101
2:45 PM	11	13	27	0	74	12	72	0	58	321	9	3	23	348	112	3	1086
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	237	153	533	0	1291	225	812	2	1002	5280	111	71	417	5676	1756	43	17609
APPROACH %'s :	25.68%	16.58%	57.75%	0.00%	55.41%	9.66%	34.85%	0.09%	15.50%	81.68%	1.72%	1.10%	5.28%	71.92%	22.25%	0.54%	
PEAK HR :	01:15 PM - 02:15 PM																TOTAL
PEAK HR VOL :	64	36	164	0	379	72	237	0	246	1354	30	10	89	1487	429	15	4612
PEAK HR FACTOR :	0.889	0.818	0.745	0.000	0.902	0.818	0.912	0.000	0.788	0.967	0.750	0.625	0.856	0.968	0.933	0.469	0.980
	0.825				0.901				0.940				0.982				

Prepared by National Data & Surveying Services

S Randolph Ave & Imperial Hwy

Peak Hour Turning Movement Count

ID: 19-01101-013
City: Brea

Day: Saturday
Date: 05/18/2019

PEAK HOURS	COUNT PERIODS
NONE	NONE
01:15 PM - 02:15 PM	11:00 AM - 03:00 PM
NONE	NONE

S Randolph Ave — SOUTHBOUND

	L	T	R	U	Total	
AM	0	0	0	0	0	AM
NOON	237	72	379	0	711	NOON
PM	0	0	0	0	0	PM

Imperial Hwy — EASTBOUND

AM	NOON	PM	
0	1798	0	
0	10	0	0
0	246	0	2
0	1354	0	3
0	30	0	0

Imperial Hwy — WESTBOUND

PM	NOON	AM	
0	429	0	1
0	1487	0	3
0	89	0	1
0	15	0	0
0	1912	0	

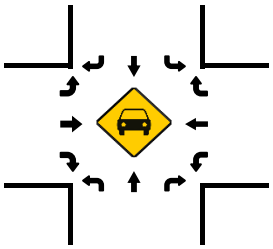
S Randolph Ave — NORTHBOUND

	L	T	T	R	Total	
PM	0	0	0	0	0	PM
NOON	191	0	64	36	164	NOON
AM	0	0	0	0	0	AM

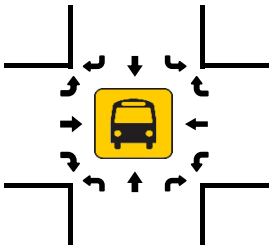
	L	T	T	R
	0.5	0.5	2	0
	0	1.5	1	0.5

CONTROL			
Signalized			
TEV	0 AM	4612 NOON	0 PM
PHF		0.98	

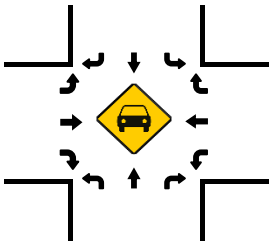
Total Vehicles (AM)



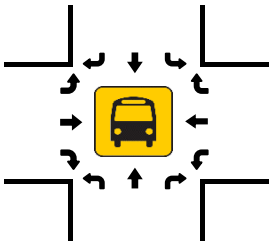
Total Vehicles (AM)



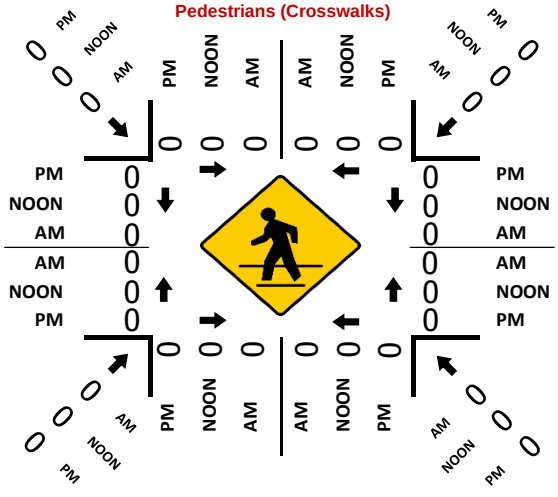
Total Vehicles (NOON)



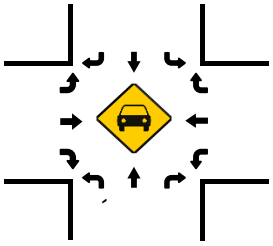
Total Vehicles (NOON)



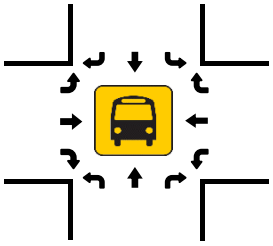
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: S State College Blvd & Imperial Hwy
City: Brea
Control: Signalized

Project ID: 19-01101-014
Date: 5/22/2019

Total

NS/EW Streets:	S State College Blvd				S State College Blvd				Imperial Hwy				Imperial Hwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	1	0	2	1.5	0.5	0	2	3.5	0.5	0	2	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	16	30	84	1	13	85	7	0	3	348	39	0	90	264	32	7	1019
7:15 AM	11	31	99	0	12	90	5	0	6	352	31	1	74	353	24	9	1098
7:30 AM	20	16	90	0	17	81	7	0	7	402	42	0	93	380	22	5	1182
7:45 AM	33	34	98	0	17	76	5	0	7	347	48	0	111	397	34	6	1213
8:00 AM	27	46	91	1	28	76	8	0	10	345	42	0	107	315	37	5	1138
8:15 AM	21	32	89	3	23	62	11	0	7	375	26	0	75	292	35	5	1056
8:30 AM	40	47	98	0	36	69	6	0	17	334	38	0	64	284	62	8	1103
8:45 AM	39	34	84	0	20	67	8	0	8	259	29	1	78	362	48	7	1044
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	207	270	733	5	166	606	57	0	65	2762	295	2	692	2647	294	52	8853
APPROACH %'s :	17.04%	22.22%	60.33%	0.41%	20.02%	73.10%	6.88%	0.00%	2.08%	88.41%	9.44%	0.06%	18.78%	71.83%	7.98%	1.41%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	91	127	378	1	74	323	25	0	30	1446	163	1	385	1445	117	25	4631
PEAK HR FACTOR :	0.689	0.690	0.955	0.250	0.661	0.897	0.781	0.000	0.750	0.899	0.849	0.250	0.867	0.910	0.791	0.694	0.954
	0.905				0.942				0.909				0.900				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	1	0	2	1.5	0.5	0	2	3.5	0.5	0	2	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	41	69	45	3	71	68	19	0	13	378	24	0	92	398	125	11	1357
4:15 PM	44	96	73	3	65	50	18	0	16	365	34	0	86	403	101	5	1359
4:30 PM	65	105	58	1	74	60	16	0	22	380	40	1	83	401	82	8	1396
4:45 PM	60	114	65	0	86	71	24	0	26	346	32	0	95	443	87	4	1453
5:00 PM	60	109	77	0	65	53	25	0	25	415	26	0	102	449	102	9	1517
5:15 PM	99	133	89	2	104	63	23	0	22	454	11	0	85	428	120	9	1642
5:30 PM	91	129	75	0	91	69	12	0	23	397	22	0	78	454	66	6	1513
5:45 PM	82	128	87	0	100	66	29	0	32	409	28	0	118	371	121	11	1582
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	542	883	569	9	656	500	166	0	179	3144	217	1	739	3347	804	63	11819
APPROACH %'s :	27.06%	44.08%	28.41%	0.45%	49.62%	37.82%	12.56%	0.00%	5.06%	88.79%	6.13%	0.03%	14.92%	67.58%	16.23%	1.27%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	332	499	328	2	360	251	89	0	102	1675	87	0	383	1702	409	35	6254
PEAK HR FACTOR :	0.838	0.938	0.921	0.250	0.865	0.909	0.767	0.000	0.797	0.922	0.777	0.000	0.811	0.937	0.845	0.795	0.952
	0.899				0.897				0.957				0.955				

Prepared by National Data & Surveying Services

S State College Blvd & Imperial Hwy

Peak Hour Turning Movement Count

ID: 19-01101-014
City: Brea

Day: Wednesday
Date: 05/22/2019

PEAK HOURS

AM	07:15 AM - 08:15 AM
NOON	NONE
PM	05:00 PM - 06:00 PM

COUNT PERIODS

AM	07:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 06:00 PM

S State College Blvd — SOUTHBOUND

AM	25	323	74	0	274	AM
NOON	0	0	0	0	0	NOON
PM	89	251	360	0	1010	PM

Imperial Hwy — EASTBOUND

AM	NOON	PM		
1562	0	2123	⇦	
1	0	0	↶	0
30	0	102	↱	2
1446	0	1675	→	3.5
163	0	87	↴	0.5
AM	NOON	PM		

Imperial Hwy — WESTBOUND

PM	NOON	AM		
409	0	117	↰	1
1702	0	1445	←	3
383	0	385	↰	2
35	0	25	↶	0
2398	0	1923	⇨	
PM	NOON	AM		

	0.5	1.5	2	0
	0	2	2	1

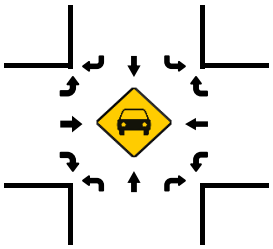
CONTROL: Signalized

TEV	4631	0	6254
	AM	NOON	PM
PHF	0.95		0.95

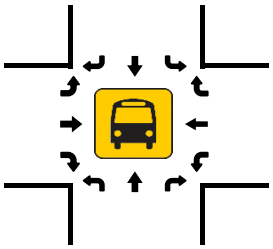
S State College Blvd — NORTHBOUND

PM	723	2	332	499	328	PM
NOON	0	0	0	0	0	NOON
AM	872	1	91	127	378	AM

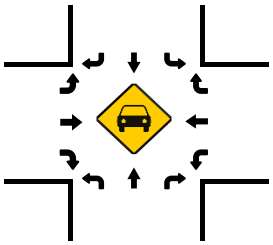
Total Vehicles (AM)



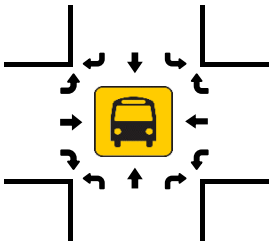
Total Vehicles (AM)



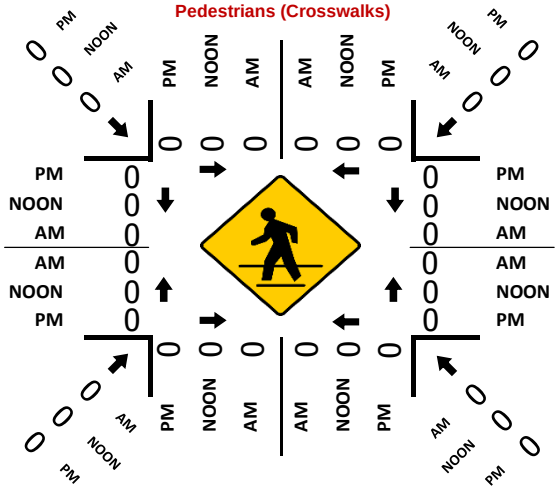
Total Vehicles (NOON)



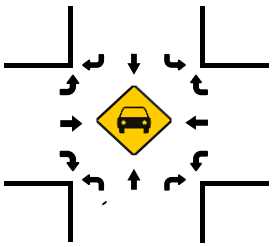
Total Vehicles (NOON)



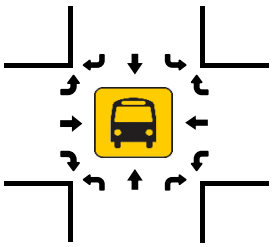
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: S State College Blvd & Imperial Hwy
City: Brea
Control: Signalized

Project ID: 19-01101-014
Date: 5/18/2019

Total

NS/EW Streets:	S State College Blvd				S State College Blvd				Imperial Hwy				Imperial Hwy				
NOON	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	1	0	2	1.5	0.5	0	2	3.5	0.5	0	2	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
11:00 AM	48	68	94	1	86	39	32	0	29	362	27	1	97	368	178	10	1440
11:15 AM	53	89	119	3	79	63	24	0	21	375	32	2	94	365	212	16	1547
11:30 AM	64	105	128	3	88	44	44	0	40	368	37	2	98	385	165	13	1584
11:45 AM	59	110	146	3	105	65	31	0	22	330	31	0	137	440	241	24	1744
12:00 PM	70	106	137	1	120	78	45	0	29	349	50	1	129	399	183	24	1721
12:15 PM	54	110	138	4	124	93	38	0	41	359	39	0	124	414	200	17	1755
12:30 PM	56	133	114	5	138	107	55	0	33	382	48	0	135	426	203	13	1848
12:45 PM	55	94	99	1	129	111	41	0	37	340	44	1	108	382	185	19	1646
1:00 PM	47	84	93	4	123	78	38	0	29	396	36	0	139	432	198	17	1714
1:15 PM	47	67	88	1	138	99	40	0	36	394	42	1	125	403	217	13	1711
1:30 PM	58	82	99	3	147	90	46	0	32	403	39	0	129	392	189	13	1722
1:45 PM	55	77	101	1	150	94	42	0	36	420	43	1	145	423	188	17	1793
2:00 PM	39	76	92	1	155	110	37	0	32	416	41	3	112	414	188	23	1739
2:15 PM	43	73	86	0	118	89	53	0	34	373	34	0	115	368	168	18	1572
2:30 PM	43	77	83	2	156	99	46	0	23	375	40	0	117	392	179	14	1646
2:45 PM	37	68	79	2	145	108	41	0	33	375	34	0	112	388	188	19	1629
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	828	1419	1696	35	2001	1367	653	0	507	6017	617	12	1916	6391	3082	270	26811
APPROACH %'s :	20.81%	35.67%	42.63%	0.88%	49.76%	34.00%	16.24%	0.00%	7.09%	84.12%	8.63%	0.17%	16.43%	54.82%	26.43%	2.32%	
PEAK HR :	11:45 AM - 12:45 PM																TOTAL
PEAK HR VOL :	239	459	535	13	487	343	169	0	125	1420	168	1	525	1679	827	78	7068
PEAK HR FACTOR :	0.854	0.863	0.916	0.650	0.882	0.801	0.768	0.000	0.762	0.929	0.840	0.250	0.958	0.954	0.858	0.813	0.956
	0.980				0.833				0.925				0.923				

Prepared by National Data & Surveying Services

S State College Blvd & Imperial Hwy

Peak Hour Turning Movement Count

ID: 19-01101-014
City: Brea

Day: Saturday
Date: 05/18/2019

PEAK HOURS	COUNT PERIODS
NONE	NONE
11:45 AM - 12:45 PM	11:00 AM - 03:00 PM
NONE	NONE

S State College Blvd — SOUTHBOUND

AM	0	0	0	0	0	AM
NOON	169	343	487	0	1411	NOON
PM	0	0	0	0	0	PM

Imperial Hwy — EASTBOUND

AM	NOON	PM	
0	2088	0	
0	1	0	0
0	125	0	2
0	1420	0	3.5
0	168	0	0.5

CONTROL

Signalized

	AM	NOON	PM
TEV	0	7068	0
PHF		0.96	

Imperial Hwy — WESTBOUND

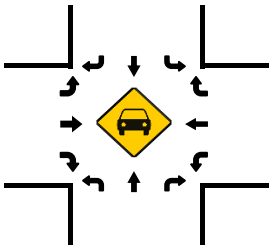
PM	NOON	AM	
0	827	0	1
0	1679	0	3
0	525	0	2
0	78	0	0
0	2520	0	

S State College Blvd — NORTHBOUND

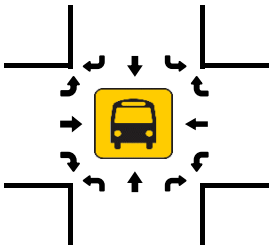
PM	0	0	0	0	0	PM
NOON	1049	13	239	459	535	NOON
AM	0	0	0	0	0	AM

0 2 2 1

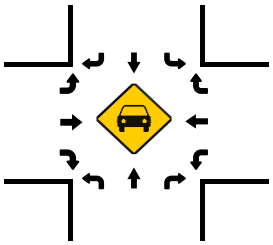
Total Vehicles (AM)



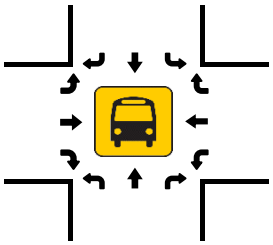
Total Vehicles (AM)



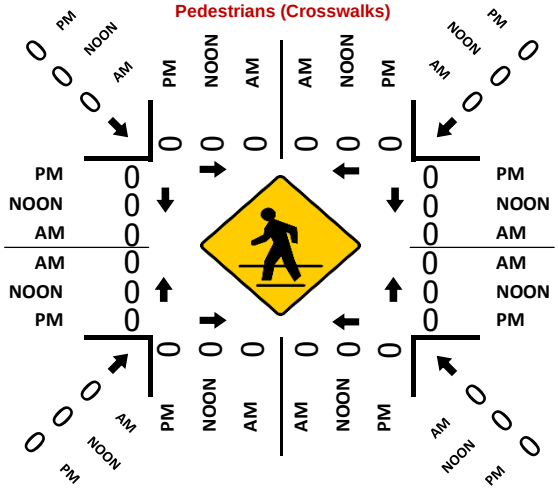
Total Vehicles (NOON)



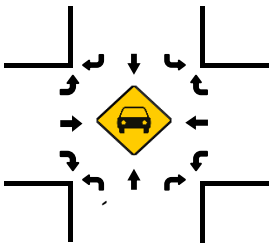
Total Vehicles (NOON)



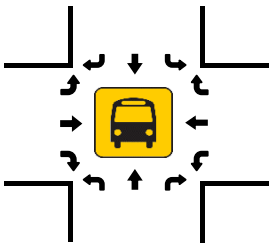
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: SR-57 SB Ramps & Imperial Hwy
City: Brea
Control: Signalized

Project ID: 19-01101-015
Date: 5/22/2019

Total

NS/EW Streets:	SR-57 SB Ramps				SR-57 SB Ramps				Imperial Hwy				Imperial Hwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	1.5	0	1.5	0	0	3	1	0	0	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	145	0	89	0	0	316	142	0	0	305	30	0	1027
7:15 AM	0	0	0	0	145	0	107	0	0	343	138	0	0	363	35	0	1131
7:30 AM	0	0	0	0	164	0	115	0	0	367	158	0	0	417	43	0	1264
7:45 AM	0	0	0	0	123	0	128	0	0	312	155	0	0	391	35	0	1144
8:00 AM	0	0	0	0	115	0	86	0	0	317	156	0	0	387	58	0	1119
8:15 AM	0	0	0	0	102	0	83	0	0	328	162	0	0	328	47	0	1050
8:30 AM	0	0	0	0	89	0	80	0	0	326	130	0	0	332	64	0	1021
8:45 AM	0	0	0	0	102	0	99	0	0	284	105	0	0	394	61	0	1045
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	985	0	787	0	0	2593	1146	0	0	2917	373	0	8801
APPROACH %'s :					55.59%	0.00%	44.41%	0.00%	0.00%	69.35%	30.65%	0.00%	0.00%	88.66%	11.34%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	0	0	0	547	0	436	0	0	1339	607	0	0	1558	171	0	4658
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.834	0.000	0.852	0.000	0.000	0.912	0.960	0.000	0.000	0.934	0.737	0.000	0.921
					0.881				0.927				0.940				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	1.5	0	1.5	0	0	3	1	0	0	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	131	0	102	0	0	340	161	0	0	527	111	0	1372
4:15 PM	0	0	0	0	142	0	108	0	0	385	134	0	0	459	104	0	1332
4:30 PM	0	0	0	0	102	0	97	0	0	343	169	0	0	502	101	0	1314
4:45 PM	0	0	0	0	129	0	117	0	0	327	175	0	0	522	137	0	1407
5:00 PM	0	0	0	0	150	0	135	0	0	345	248	0	0	517	100	0	1495
5:15 PM	0	0	0	0	169	0	127	0	0	411	213	0	0	496	86	0	1502
5:30 PM	0	0	0	0	161	0	120	0	0	396	194	0	0	507	82	0	1460
5:45 PM	0	0	0	0	140	0	110	0	0	384	190	0	0	518	100	0	1442
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	1124	0	916	0	0	2931	1484	0	0	4048	821	0	11324
APPROACH %'s :					55.10%	0.00%	44.90%	0.00%	0.00%	66.39%	33.61%	0.00%	0.00%	83.14%	16.86%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	620	0	492	0	0	1536	845	0	0	2038	368	0	5899
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.917	0.000	0.911	0.000	0.000	0.934	0.852	0.000	0.000	0.984	0.920	0.000	0.982
					0.939				0.954				0.973				

Prepared by National Data & Surveying Services

SR-57 SB Ramps & Imperial Hwy

Peak Hour Turning Movement Count

ID: 19-01101-015
City: Brea

Day: Wednesday
Date: 05/22/2019

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NONE	NONE
05:00 PM - 06:00 PM	04:00 PM - 06:00 PM

SR-57 SB Ramps — SOUTHBOUND

AM	436	0	547	0	171	AM
NOON	0	0	0	0	0	NOON
PM	492	0	620	0	368	PM
	1.5	0	1.5	0		

Imperial Hwy — EASTBOUND

AM	NOON	PM	
1994	0	2530	⇦
0	0	0	0 ↶
0	0	0	0 ↱
1339	0	1536	3 →
607	0	845	1 ↴
AM	NOON	PM	

CONTROL

Signalized

TEV	4658	0	5899
	AM	NOON	PM
PHF	0.92		0.98

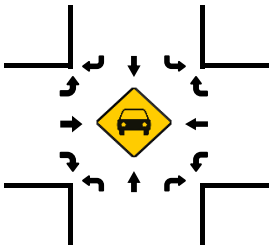
Imperial Hwy — WESTBOUND

PM	NOON	AM	
368	0	171	1 ↰
2038	0	1558	3 ←
0	0	0	0 ↰
0	0	0	0 ↶
2156	0	1886	⇨
PM	NOON	AM	

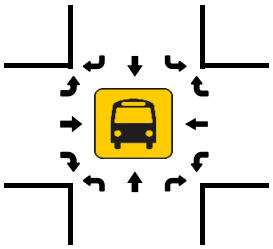
SR-57 SB Ramps — NORTHBOUND

PM	845	0	0	0	0	PM
NOON	0	0	0	0	0	NOON
AM	607	0	0	0	0	AM
		0	0	0	0	

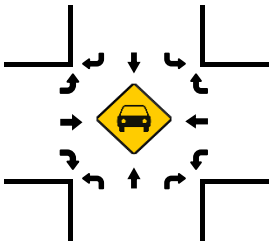
Total Vehicles (AM)



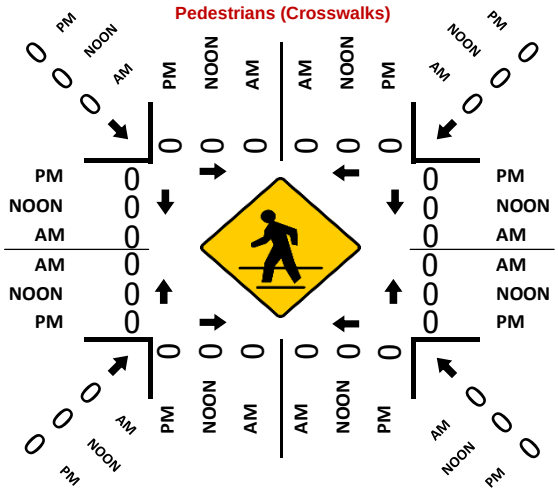
Total Vehicles (AM)



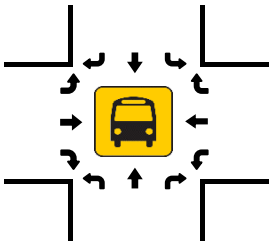
Total Vehicles (NOON)



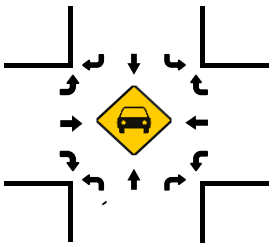
Pedestrians (Crosswalks)



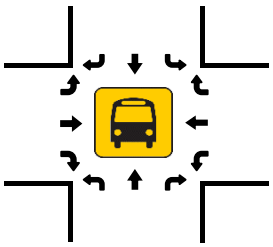
Total Vehicles (NOON)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: SR-57 SB Ramps & Imperial Hwy
City: Brea
Control: Signalized

Project ID: 19-01101-015
Date: 5/18/2019

Total

NS/EW Streets:	SR-57 SB Ramps				SR-57 SB Ramps				Imperial Hwy				Imperial Hwy				
	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
NOON	0	0	0	0	1.5	0	1.5	0	0	3	1	0	0	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
11:00 AM	0	0	0	0	110	0	137	0	0	364	186	0	0	527	88	0	1412
11:15 AM	0	0	0	0	125	0	160	0	0	384	201	0	0	517	96	0	1483
11:30 AM	0	0	0	0	112	0	152	0	0	428	185	0	0	534	94	0	1505
11:45 AM	0	0	0	0	156	0	202	0	0	427	203	0	0	630	87	0	1705
12:00 PM	0	0	0	0	110	0	188	0	0	413	200	0	0	552	41	0	1504
12:15 PM	0	0	0	0	155	0	208	0	0	414	214	0	0	538	73	0	1602
12:30 PM	0	0	0	0	181	0	165	0	0	460	200	0	0	609	71	0	1686
12:45 PM	0	0	0	0	166	0	175	0	0	447	185	0	0	544	64	0	1581
1:00 PM	0	0	0	0	147	0	187	0	0	414	196	0	0	577	83	0	1604
1:15 PM	0	0	0	0	143	0	180	0	0	435	219	0	0	572	62	0	1611
1:30 PM	0	0	0	0	133	0	190	0	0	440	211	0	0	565	96	0	1635
1:45 PM	0	0	0	0	132	0	167	0	0	440	257	0	0	585	91	0	1672
2:00 PM	0	0	0	0	102	0	147	0	0	461	258	0	0	572	87	0	1627
2:15 PM	0	0	0	0	99	0	138	0	0	403	211	0	0	557	76	0	1484
2:30 PM	0	0	0	0	102	0	142	0	0	416	237	0	0	563	97	0	1557
2:45 PM	0	0	0	0	109	0	145	0	0	417	224	0	0	534	81	0	1510
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	2082	0	2683	0	0	6763	3387	0	0	8976	1287	0	25178
APPROACH %'s :					43.69%	0.00%	56.31%	0.00%	0.00%	66.63%	33.37%	0.00%	0.00%	87.46%	12.54%	0.00%	
PEAK HR :	**01:15 PM - 02:15 PM**																TOTAL
PEAK HR VOL :	0	0	0	0	510	0	684	0	0	1776	945	0	0	2294	336	0	6545
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.892	0.000	0.900	0.000	0.000	0.963	0.916	0.000	0.000	0.980	0.875	0.000	0.979
						0.924				0.946				0.973			

Prepared by National Data & Surveying Services

SR-57 SB Ramps & Imperial Hwy

Peak Hour Turning Movement Count

ID: 19-01101-015
City: Brea

Day: Saturday
Date: 05/18/2019

PEAK HOURS	COUNT PERIODS
NONE	NONE
01:15 PM - 02:15 PM	11:00 AM - 03:00 PM
NONE	NONE

SR-57 SB Ramps — SOUTHBOUND

AM	0	0	0	0	0	AM
NOON	684	0	510	0	336	NOON
PM	0	0	0	0	0	PM

1.5 0 1.5 0

EASTBOUND (Imperial Hwy)

AM	NOON	PM	
0	2978	0	
0	0	0	0
0	0	0	0
0	1776	0	3
0	945	0	1
AM	NOON	PM	

WESTBOUND (Imperial Hwy)

	PM	NOON	AM
1	0	336	0
3	0	2294	0
0	0	0	0
0	0	0	0
	0	2286	0
	PM	NOON	AM

CONTROL

Signalized

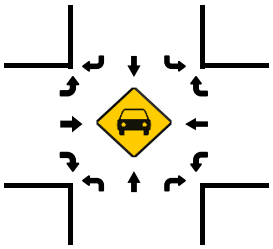
	AM	NOON	PM
TEV	0	6545	0
PHF		0.98	

0 0 0 0

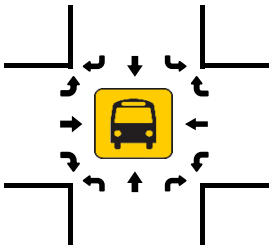
NORTHBOUND — SR-57 SB Ramps

PM	0	0	0	0	0	PM
NOON	945	0	0	0	0	NOON
AM	0	0	0	0	0	AM

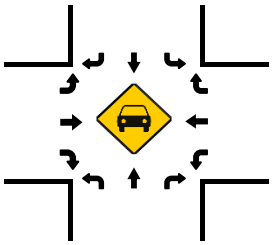
Total Vehicles (AM)



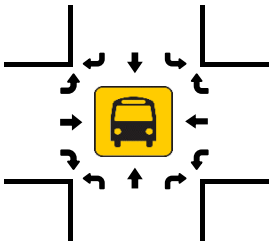
Total Vehicles (AM)



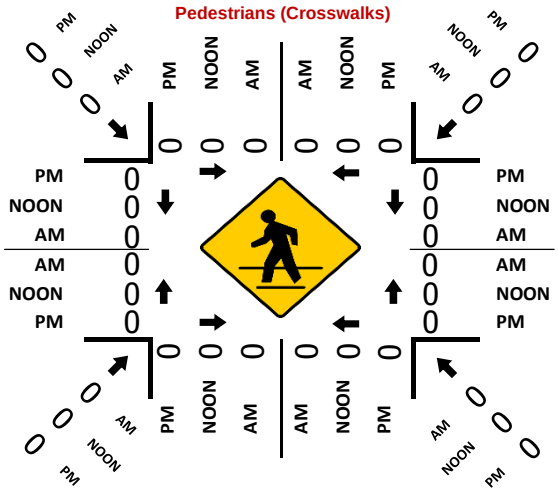
Total Vehicles (NOON)



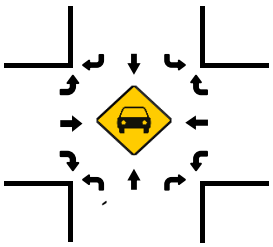
Total Vehicles (NOON)



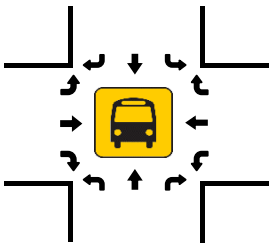
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: SR-57 NB Ramps & Imperial Hwy
City: Brea
Control: Signalized

Project ID: 19-01101-016
Date: 5/22/2019

Total

NS/EW Streets:	SR-57 NB Ramps					SR-57 NB Ramps					Imperial Hwy					Imperial Hwy									
AM	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND					SOUTHBOUND2					
	2.3	0.3	1.3	0	0	0	0	2	0	0	1	3	1	0	0	0	4	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	NT2	SL	ST	SR	SU	SU2	EL	ET	ER	EU	EL2	WL	WT	WR	WU	WR2	S2U	S2L2	S2T2	S2R2	S2U2	TOTAL
7:00 AM	152	46	165	0	0	0	0	14	0	6	23	318	132	0	0	0	167	3	0	125	0	0	0	0	0	1151
7:15 AM	207	50	192	0	0	0	0	16	0	17	29	312	133	0	0	0	177	2	0	105	0	0	0	0	0	1240
7:30 AM	245	50	173	0	0	0	0	12	0	9	34	366	133	0	0	0	203	3	0	119	0	0	0	0	0	1347
7:45 AM	174	43	204	0	1	0	0	12	0	7	65	264	122	0	0	0	240	1	0	111	0	0	0	0	0	1244
8:00 AM	160	24	177	0	0	0	0	12	0	5	24	275	117	0	0	0	253	0	0	120	0	0	0	0	0	1167
8:15 AM	187	24	187	0	1	0	0	12	0	13	15	302	109	0	0	0	200	3	0	124	0	0	0	0	0	1177
8:30 AM	171	34	212	0	1	0	0	18	0	5	29	274	116	0	0	0	203	3	0	108	0	0	0	0	0	1174
8:45 AM	223	28	203	0	0	0	0	15	0	9	39	242	97	0	0	0	226	4	0	93	0	0	0	0	0	1179
	NL	NT	NR	NU	NT2	SL	ST	SR	SU	SU2	EL	ET	ER	EU	EL2	WL	WT	WR	WU	WR2	S2U	S2L2	S2T2	S2R2	S2U2	TOTAL
TOTAL VOLUMES :	1519	299	1513	0	3	0	0	111	0	71	258	2353	959	0	0	0	1669	19	0	905	0	0	0	0	0	9679
APPROACH %'s :	45.56%	8.97%	45.38%	0.00%	0.09%	0.00%	0.00%	60.99%	0.00%	39.01%	7.23%	65.91%	26.86%	0.00%	0.00%	0.00%	64.37%	0.73%	0.00%	34.90%						
PEAK HR :	07:15 AM - 08:15 AM																									TOTAL
PEAK HR VOL :	786	167	746	0	1	0	0	52	0	38	152	1217	505	0	0	0	873	6	0	455	0	0	0	0	0	4998
PEAK HR FACTOR :	0.802	0.835	0.914	0.000	0.250	0.000	0.000	0.813	0.000	0.559	0.585	0.831	0.949	0.000	0.000	0.000	0.863	0.500	0.000	0.948	0.000	0.000	0.000	0.000	0.000	0.928
			0.908					0.682					0.879					0.894								

PM	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND					SOUTHBOUND2					
	2.3	0.3	1.3	0	0	0	0	2	0	0	1	3	1	0	0	0	4	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	NT2	SL	ST	SR	SU	SU2	EL	ET	ER	EU	EL2	WL	WT	WR	WU	WR2	S2U	S2L2	S2T2	S2R2	S2U2	TOTAL
4:00 PM	258	15	128	0	1	0	0	51	0	8	38	392	44	0	0	0	327	9	0	88	0	0	0	0	0	1359
4:15 PM	195	12	112	0	2	0	0	30	0	14	37	417	70	0	0	0	345	14	0	133	0	0	0	0	0	1381
4:30 PM	188	21	117	0	1	0	0	39	0	13	48	358	63	0	0	0	371	6	0	149	0	0	0	0	0	1374
4:45 PM	215	26	120	0	3	0	0	51	0	17	45	327	55	0	0	0	393	11	0	174	0	0	0	0	0	1437
5:00 PM	200	6	125	0	6	0	0	51	0	15	40	394	79	0	0	0	366	8	0	176	0	0	0	0	0	1466
5:15 PM	205	15	84	0	6	0	0	37	0	18	43	425	99	0	0	0	332	12	0	201	0	0	0	0	0	1477
5:30 PM	208	16	82	0	4	0	0	59	0	10	47	422	80	0	0	0	347	8	0	180	0	0	0	0	0	1463
5:45 PM	200	22	98	0	2	0	0	41	0	13	52	396	80	0	0	0	360	15	0	181	0	0	0	0	0	1460
	NL	NT	NR	NU	NT2	SL	ST	SR	SU	SU2	EL	ET	ER	EU	EL2	WL	WT	WR	WU	WR2	S2U	S2L2	S2T2	S2R2	S2U2	TOTAL
TOTAL VOLUMES :	1669	133	866	0	25	0	0	359	0	108	350	3131	570	0	0	0	2841	83	0	1282	0	0	0	0	0	11417
APPROACH %'s :	61.98%	4.94%	32.16%	0.00%	0.93%	0.00%	0.00%	76.87%	0.00%	23.13%	8.64%	77.29%	14.07%	0.00%	0.00%	0.00%	67.55%	1.97%	0.00%	30.48%						
PEAK HR :	05:00 PM - 06:00 PM																									TOTAL
PEAK HR VOL :	813	59	389	0	18	0	0	188	0	56	182	1637	338	0	0	0	1405	43	0	738	0	0	0	0	0	5866
PEAK HR FACTOR :	0.977	0.670	0.778	0.000	0.750	0.000	0.000	0.797	0.000	0.778	0.875	0.963	0.854	0.000	0.000	0.000	0.960	0.717	0.000	0.918	0.000	0.000	0.000	0.000	0.000	0.993
			0.949					0.884					0.951					0.983								

Prepared by National Data & Surveying Services

SR-57 NB Ramps & Imperial Hwy

Peak Hour Turning Movement Count

ID: 19-01101-016
City: Brea

Day: Wednesday
Date: 05/22/2019

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NONE	NONE
05:00 PM - 06:00 PM	04:00 PM - 06:00 PM

SR-57 NB Ramps — SOUTHBOUND

AM	52	0	0	0	325	AM
NOON	0	0	0	0	0	NOON
PM	188	0	0	0	284	PM

EASTBOUND — Imperial Hwy

AM	NOON	PM	
1711	0	2406	⇦
0	0	0	0 ↶
152	0	182	1 ↱
1217	0	1637	3 →
505	0	338	1 ↳

WESTBOUND — Imperial Hwy

PM	NOON	AM	
43	0	6	0 ↰
1405	0	873	4 ←
0	0	0	0 ↰
0	0	0	0 ↶
2026	0	1963	⇨

CONTROL

Signalized

TEV	4504 AM	0 NOON	5054 PM
PHF	0.93		0.99

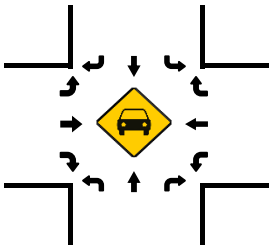
2	0	0	0

0	2.3	0.3	1.3

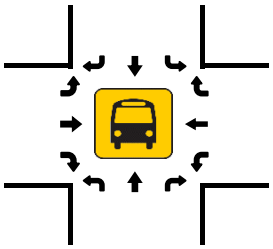
NORTHBOUND — SR-57 NB Ramps

PM	338	0	813	59	389	PM
NOON	0	0	0	0	0	NOON
AM	505	0	786	167	746	AM

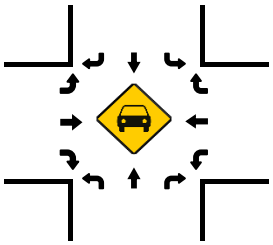
Total Vehicles (AM)



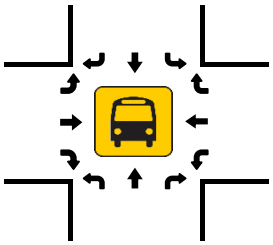
Total Vehicles (AM)



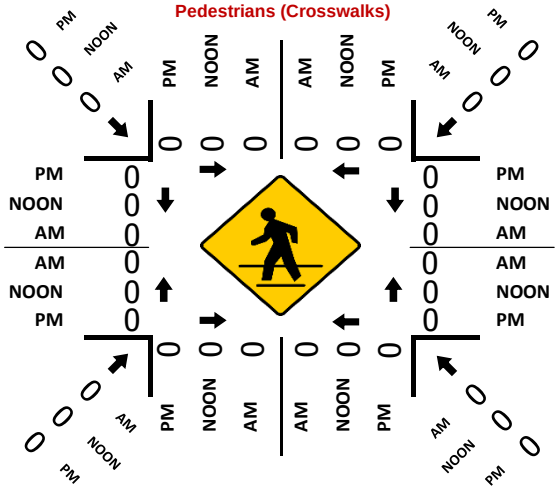
Total Vehicles (NOON)



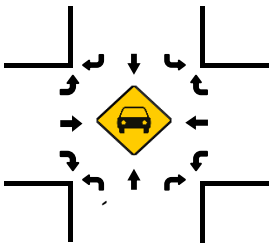
Total Vehicles (NOON)



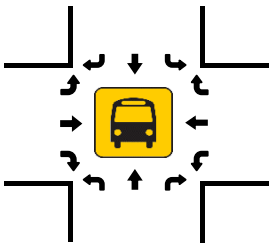
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: SR-57 NB Ramps & Imperial Hwy
City: Brea
Control: Signalized

Project ID: 19-01101-016
Date: 5/18/2019

Total

NS/EW Streets:	SR-57 NB Ramps					SR-57 NB Ramps					Imperial Hwy					Imperial Hwy									
NOON	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND							SOUTHBOUND2			
	2.3	0.3	1.3	0	0	0	0	2	0	0	1	3	1	0	0	0	4	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	NT2	SL	ST	SR	SU	SU2	EL	ET	ER	EU	EL2	WL	WT	WR	WU	WR2	S2U	S2L2	S2T2	S2R2	S2U2	TOTAL
11:00 AM	258	30	110	0	0	0	0	31	0	10	60	320	115	0	0	0	314	8	0	125	0	0	0	0	0	1381
11:15 AM	287	29	118	0	1	0	0	38	0	13	53	321	140	0	0	0	290	6	0	108	0	0	0	0	0	1404
11:30 AM	313	33	114	0	1	0	0	31	0	11	60	327	136	0	0	0	312	7	0	120	0	0	0	0	0	1465
11:45 AM	314	29	130	0	1	0	0	52	0	7	59	350	157	0	0	0	340	9	0	121	0	0	0	0	0	1569
12:00 PM	285	47	125	0	7	0	0	40	1	15	53	350	134	0	0	0	293	7	0	111	0	0	0	0	0	1468
12:15 PM	261	31	121	0	3	0	0	49	0	9	44	377	147	0	0	0	294	6	0	106	0	0	0	0	0	1448
12:30 PM	301	45	133	0	1	0	0	34	0	14	52	461	127	0	0	0	330	4	0	111	0	0	0	0	0	1613
12:45 PM	322	34	142	0	0	0	0	40	0	8	51	425	148	0	0	0	273	11	0	118	0	0	0	0	0	1572
1:00 PM	271	35	119	0	3	0	0	58	0	12	69	376	126	0	0	0	310	8	0	102	0	0	0	0	0	1489
1:15 PM	283	35	132	0	1	0	0	43	0	16	75	361	120	0	0	0	300	7	0	119	0	0	0	0	0	1492
1:30 PM	245	33	111	0	3	0	0	54	0	27	63	388	138	0	0	0	373	10	0	121	0	0	0	0	0	1566
1:45 PM	260	28	121	0	0	0	0	57	0	26	54	372	153	0	0	0	333	6	0	134	0	0	0	0	0	1544
2:00 PM	268	27	126	0	0	0	0	49	0	18	51	377	144	0	0	0	333	11	0	102	0	0	0	0	0	1506
2:15 PM	260	31	116	0	1	0	0	64	0	18	50	308	128	0	0	0	335	7	0	120	0	0	0	0	0	1438
2:30 PM	255	30	124	0	1	0	0	48	0	17	56	321	147	0	0	0	340	5	0	108	0	0	0	0	0	1452
2:45 PM	255	51	109	0	0	0	0	51	0	22	53	342	127	0	0	0	305	8	0	121	0	0	0	0	0	1444
	NL	NT	NR	NU	NT2	SL	ST	SR	SU	SU2	EL	ET	ER	EU	EL2	WL	WT	WR	WU	WR2	S2U	S2L2	S2T2	S2R2	S2U2	TOTAL
TOTAL VOLUMES :	4438	548	1951	0	23	0	0	739	1	243	903	5776	2187	0	0	0	5075	120	0	1847	0	0	0	0	0	23851
APPROACH %'s :	63.76%	7.87%	28.03%	0.00%	0.33%	0.00%	0.00%	75.18%	0.10%	24.72%	10.18%	65.15%	24.67%	0.00%	0.00%	0.00%	72.07%	1.70%	0.00%	26.23%						
PEAK HR :	12:30 PM - 01:30 PM																									TOTAL
PEAK HR VOL :	1177	149	526	0	5	0	0	175	0	50	247	1623	521	0	0	0	1213	30	0	450	0	0	0	0	0	6166
PEAK HR FACTOR :	0.914	0.828	0.926	0.000	0.417	0.000	0.000	0.754	0.000	0.781	0.823	0.880	0.880	0.000	0.000	0.000	0.919	0.682	0.000	0.945	0.000	0.000	0.000	0.000	0.000	0.956
			0.932					0.804					0.934					0.951								

Prepared by National Data & Surveying Services

SR-57 NB Ramps & Imperial Hwy

Peak Hour Turning Movement Count

ID: 19-01101-016
City: Brea

Day: Saturday
Date: 05/18/2019

PEAK HOURS	COUNT PERIODS
NONE	NONE
12:30 PM - 01:30 PM	11:00 AM - 03:00 PM
NONE	NONE

SR-57 NB Ramps — SOUTHBOUND

AM	0	0	0	0	0	AM
NOON	175	0	0	0	426	NOON
PM	0	0	0	0	0	PM

EASTBOUND (Imperial Hwy)

AM	NOON	PM	
0	2565	0	⇦
0	0	0	↶ 0
0	247	0	↱ 1
0	1623	0	→ 3
0	521	0	↴ 1
AM	NOON	PM	

WESTBOUND (Imperial Hwy)

PM	NOON	AM	
0	30	0	0 ↰
0	1213	0	4 ←
0	0	0	0 ↰
0	0	0	0 ↶
			⇨
0	2149	0	
PM	NOON	AM	

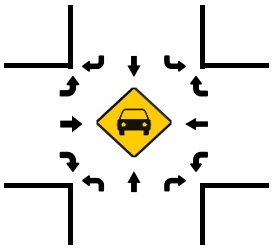
NORTHBOUND — SR-57 NB Ramps

		2	0	0	0	
		0	2.3	0.3	1.3	
PM	0	0	0	0	0	PM
NOON	521	0	1177	149	526	NOON
AM	0	0	0	0	0	AM

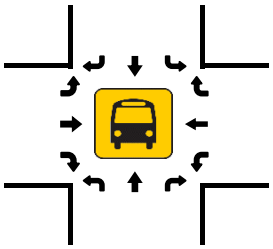
CONTROL: Signalized

	AM	NOON	PM
TEV	0	5661	0
PHF		0.96	

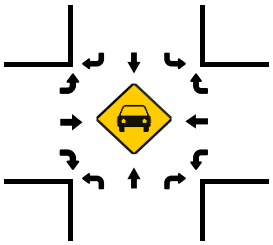
Total Vehicles (AM)



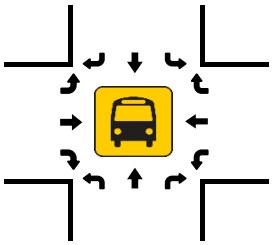
Total Vehicles (AM)



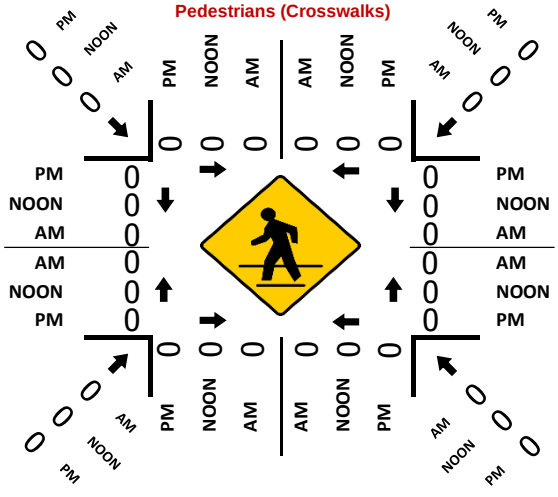
Total Vehicles (NOON)



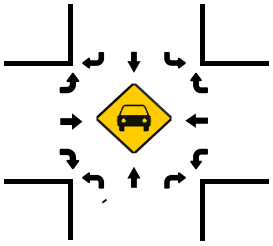
Total Vehicles (NOON)



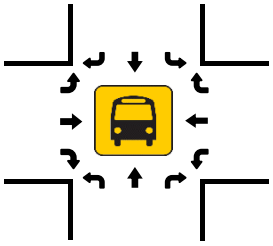
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Associated Rd & Imperial Hwy
City: Brea
Control: Signalized

Project ID: 18-01231-009
Date: 11/13/2018

Total

NS/EW Streets:	Associated Rd				Associated Rd				Imperial Hwy				Imperial Hwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	0	0	2	1	1	0	1	3	0	0	1	4	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	34	29	10	0	27	78	24	0	35	385	21	0	15	278	10	0	946
7:15 AM	50	32	12	0	32	65	26	0	37	376	32	1	23	297	10	0	993
7:30 AM	33	44	13	0	24	86	37	0	32	386	27	1	20	347	17	0	1067
7:45 AM	28	62	21	0	29	66	31	0	38	464	29	0	12	388	22	0	1190
8:00 AM	43	47	15	0	47	68	34	1	38	422	17	0	23	378	21	0	1154
8:15 AM	32	39	17	0	36	85	33	1	29	435	19	0	30	348	18	0	1122
8:30 AM	38	20	14	0	50	68	30	0	28	464	26	0	21	286	14	0	1059
8:45 AM	40	33	33	0	43	51	17	0	25	418	18	1	21	284	17	0	1001
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	298	306	135	0	288	567	232	2	262	3350	189	3	165	2606	129	0	8532
APPROACH %'s :	40.32%	41.41%	18.27%	0.00%	26.45%	52.07%	21.30%	0.18%	6.89%	88.07%	4.97%	0.08%	5.69%	89.86%	4.45%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	136	192	66	0	136	305	135	2	137	1707	92	1	85	1461	78	0	4533
PEAK HR FACTOR :	0.791	0.774	0.786	0.000	0.723	0.887	0.912	0.500	0.901	0.920	0.793	0.250	0.708	0.941	0.886	0.000	0.952
	0.887				0.932				0.912				0.962				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	0	0	2	1	1	0	1	3	0	0	1	4	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	36	48	23	0	60	60	44	1	47	389	32	1	33	392	29	0	1195
4:15 PM	50	57	24	0	49	76	58	1	49	415	35	0	32	378	39	0	1263
4:30 PM	48	56	16	0	55	67	37	0	45	406	22	0	29	412	46	1	1240
4:45 PM	52	41	17	0	75	97	69	0	55	410	31	0	37	362	55	0	1301
5:00 PM	52	56	21	1	73	87	52	0	56	383	29	1	38	346	36	0	1231
5:15 PM	55	67	20	0	60	63	48	0	65	431	34	0	45	422	33	0	1343
5:30 PM	39	76	20	0	62	76	37	0	56	424	34	0	42	420	34	0	1320
5:45 PM	50	48	21	1	63	62	42	0	62	433	41	1	32	383	41	0	1280
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	382	449	162	2	497	588	387	2	435	3291	258	3	288	3115	313	1	10173
APPROACH %'s :	38.39%	45.13%	16.28%	0.20%	33.72%	39.89%	26.26%	0.14%	10.91%	82.54%	6.47%	0.08%	7.75%	83.80%	8.42%	0.03%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	198	240	78	1	270	323	206	0	232	1648	128	1	162	1550	158	0	5195
PEAK HR FACTOR :	0.900	0.789	0.929	0.250	0.900	0.832	0.746	0.000	0.892	0.956	0.941	0.250	0.900	0.918	0.718	0.000	0.967
	0.910				0.829				0.948				0.935				

Prepared by National Data & Surveying Services

Associated Rd & Imperial Hwy

Peak Hour Turning Movement Count

ID: 18-01231-009
City: Brea

Day: Tuesday
Date: 11/13/2018

PEAK HOURS

AM	07:30 AM - 08:30 AM
NOON	NONE
PM	04:45 PM - 05:45 PM

COUNT PERIODS

AM	07:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 06:00 PM

SOUTHBOUND — Associated Rd

AM	135	305	136	2	409	AM
NOON	0	0	0	0	0	NOON
PM	206	323	270	0	630	PM

EASTBOUND — Imperial Hwy

AM	NOON	PM	
1733	0	1955	
1	0	1	0
137	0	232	1
1707	0	1648	3
92	0	128	0

WESTBOUND — Imperial Hwy

PM	NOON	AM	
158	0	78	0
1550	0	1461	4
162	0	85	1
0	0	0	0
1996	0	1909	

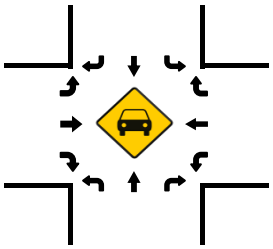
NORTHBOUND — Associated Rd

PM	614	1	198	240	78	PM
NOON	0	0	0	0	0	NOON
AM	482	0	136	192	66	AM

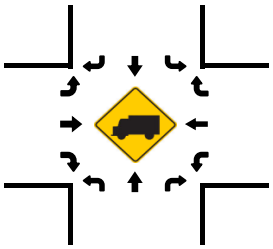
CONTROL: Signalized

TEV	4533 AM	0 NOON	5195 PM
PHF	0.95		0.97

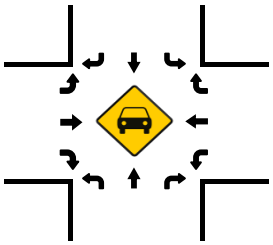
Total Vehicles (AM)



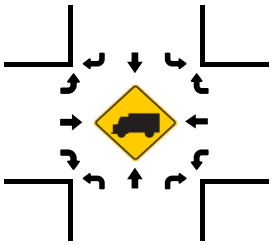
2axle (AM)



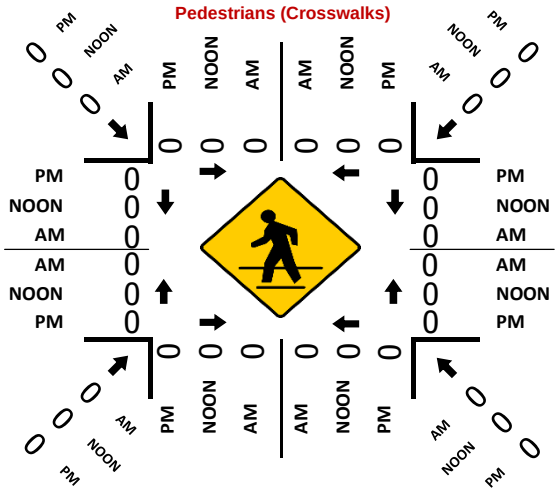
Total Vehicles (Noon)



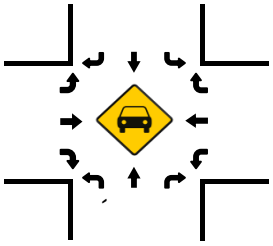
2axle (NOON)



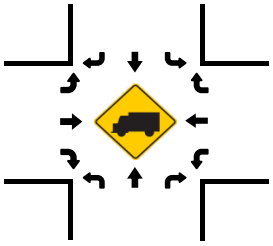
Pedestrians (Crosswalks)



Total Vehicles (PM)



2axle (PM)



INTERSECTION TURNING MOVEMENT COUNTS

T418

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Brea	PROJECT #:	SC2213
Sat, May 18, 19	NORTH & SOUTH:	Associated	LOCATION #:	4
	EAST & WEST:	Imperial	CONTROL:	SIGNAL

NOTES:

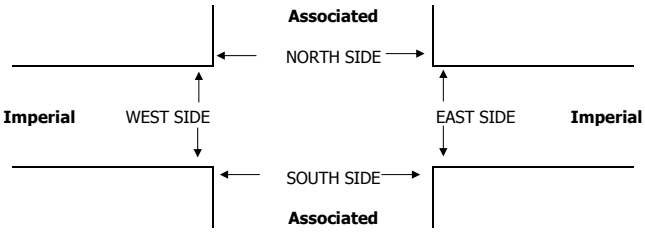
Queue WB

AM / PM / MD / OTHER / OTHER

▲ N ◄ W E ► S ▼

☑ Add U-Turns to Left Turns

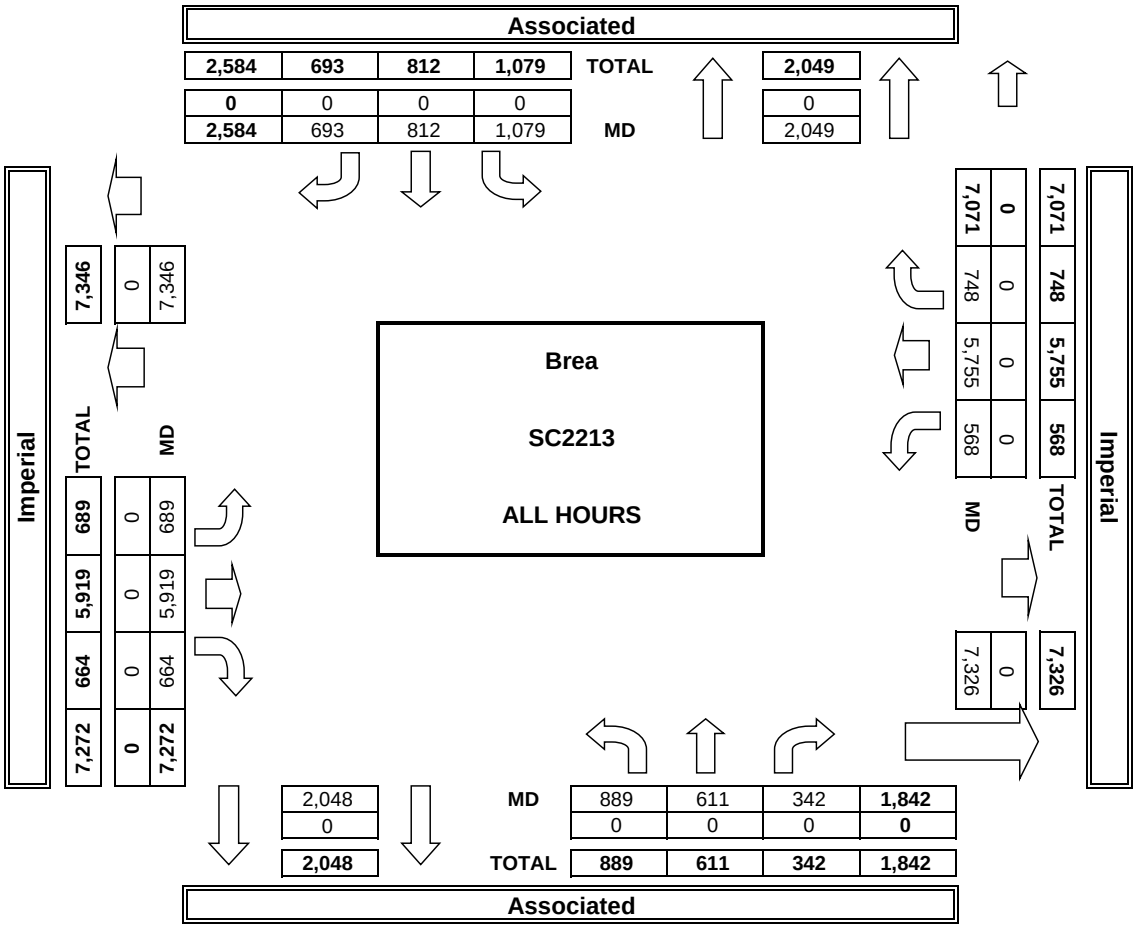
		NORTHBOUND Associated			SOUTHBOUND Associated			EASTBOUND Imperial			WESTBOUND Imperial				U-TURNS				
	LANES:	NL 2	NT 2	NR 0	SL 2	ST 1	SR 1	EL 1	ET 3	ER 0	WL 1	WT 4	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
MD	11:00 AM	50	32	20	51	32	39	35	337	26	32	378	33	1,065	1	1	1	0	3
	11:15 AM	40	21	17	48	43	31	30	361	33	36	379	61	1,100	0	1	1	0	2
	11:30 AM	78	33	20	54	37	49	38	348	36	23	366	37	1,119	0	0	3	0	3
	11:45 AM	69	44	22	65	50	39	57	368	37	35	381	54	1,221	1	0	1	0	2
	12:00 PM	70	50	19	70	55	47	52	367	26	33	321	49	1,159	1	1	1	0	3
	12:15 PM	78	42	25	81	53	43	59	360	55	28	302	44	1,170	0	0	0	0	0
	12:30 PM	60	48	29	69	63	30	57	417	75	33	342	55	1,278	0	1	2	0	3
	12:45 PM	57	41	20	89	59	47	48	404	68	27	334	49	1,243	0	1	0	0	1
	1:00 PM	51	40	30	73	47	43	47	361	43	35	324	48	1,142	0	1	0	0	1
	1:15 PM	57	43	25	78	53	49	47	373	40	42	361	43	1,211	0	1	1	0	2
	1:30 PM	36	43	17	72	58	64	31	382	32	50	393	41	1,219	0	0	0	0	0
	1:45 PM	56	38	11	78	49	46	49	393	52	35	379	42	1,228	1	1	0	0	2
	2:00 PM	47	35	18	65	65	45	41	375	40	33	349	40	1,153	0	1	1	0	2
	2:15 PM	45	33	21	61	48	42	35	348	35	42	420	66	1,196	0	1	2	0	3
	2:30 PM	45	33	32	65	51	44	34	358	32	47	375	35	1,151	0	0	0	0	0
	2:45 PM	50	35	16	60	49	35	29	367	34	37	351	51	1,114	0	4	0	0	4
	VOLUMES	889	611	342	1,079	812	693	689	5,919	664	568	5,755	748	18,769	4	14	13	0	31
	APPROACH %	48%	33%	19%	42%	31%	27%	9%	81%	9%	8%	81%	11%						
	APP/DEPART	1,842	/	2,049	2,584	/	2,048	7,272	/	7,326	7,071	/	7,346	0					
	BEGIN PEAK HR		12:30 PM																
	VOLUMES	225	172	104	309	222	169	199	1,555	226	137	1,361	195	4,874					
	APPROACH %	45%	34%	21%	44%	32%	24%	10%	79%	11%	8%	80%	12%						
	PEAK HR FACTOR		0.914			0.897			0.902			0.949		0.953					
	APP/DEPART	501	/	567	700	/	585	1,980	/	1,964	1,693	/	1,758	0					

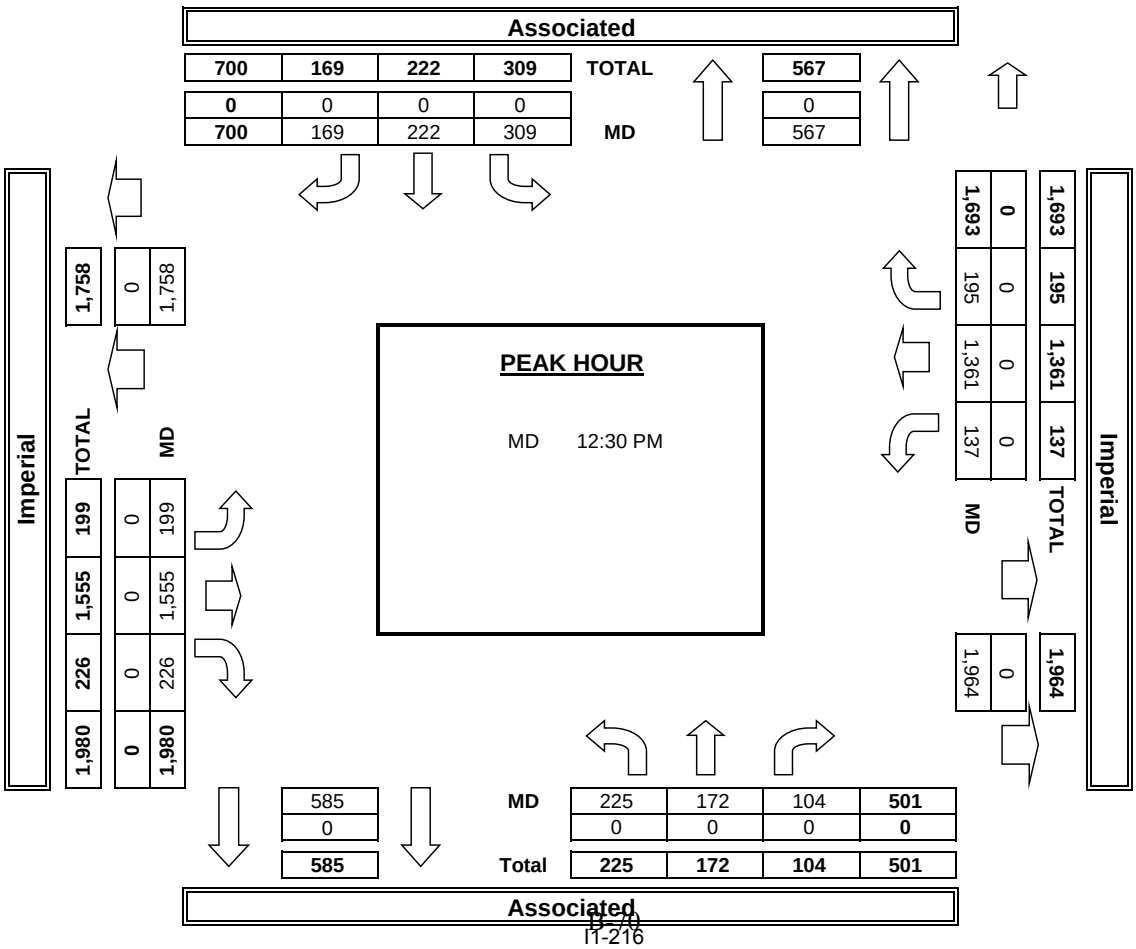


		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
MD	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AM BEGIN PEAK HR	12:30 PM					0	0	0	0	0					

AimTD LLC

TURNING MOVEMENT COUNTS





National Data & Surveying Services

Intersection Turning Movement Count

Location: Castlegate Ln/Placentia Ave & Imperial Hwy
City: Brea
Control: Signalized

Project ID: 18-01231-010
Date: 11/13/2018

Total

NS/EW Streets:	Castlegate Ln/Placentia Ave				Castlegate Ln/Placentia Ave				Imperial Hwy				Imperial Hwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1.5	0.5	1	0	1	1	0	0	1	3	1	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	27	1	19	0	6	1	0	0	0	363	55	0	21	289	5	0	787
7:15 AM	30	5	27	0	8	6	4	0	0	356	50	0	30	292	5	0	813
7:30 AM	49	5	40	0	4	2	5	0	1	362	85	0	34	312	1	0	900
7:45 AM	54	5	32	0	6	12	5	0	4	429	78	1	42	377	9	0	1054
8:00 AM	25	3	24	0	5	6	2	0	2	415	83	0	46	346	7	0	964
8:15 AM	42	1	30	0	4	5	3	0	2	392	77	0	26	338	9	0	929
8:30 AM	37	2	48	0	8	3	3	0	3	435	91	0	48	276	5	0	959
8:45 AM	34	1	32	0	8	5	3	0	2	424	72	0	32	292	7	1	913
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	298	23	252	0	49	40	25	0	14	3176	591	1	279	2522	48	1	7319
APPROACH %'s :	52.01%	4.01%	43.98%	0.00%	42.98%	35.09%	21.93%	0.00%	0.37%	83.98%	15.63%	0.03%	9.79%	88.49%	1.68%	0.04%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	158	11	134	0	23	26	13	0	11	1671	329	1	162	1337	30	0	3906
PEAK HR FACTOR :	0.731	0.550	0.698	0.000	0.719	0.542	0.650	0.000	0.688	0.960	0.904	0.250	0.844	0.887	0.833	0.000	0.926
	0.832				0.674				0.951				0.893				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1.5	0.5	1	0	1	1	0	0	1	3	1	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	41	6	35	0	8	6	2	0	3	409	61	1	40	425	12	2	1051
4:15 PM	50	8	54	0	6	3	5	0	3	421	47	0	40	433	7	1	1078
4:30 PM	66	9	56	0	2	3	2	0	5	411	54	0	48	447	7	0	1110
4:45 PM	47	4	55	0	8	12	2	0	7	425	59	0	48	405	9	0	1081
5:00 PM	49	11	63	0	7	3	5	0	3	398	65	0	56	417	14	4	1095
5:15 PM	56	20	72	0	6	3	4	0	2	429	77	0	53	444	22	4	1192
5:30 PM	41	7	54	0	5	2	2	0	4	421	77	0	38	414	15	1	1081
5:45 PM	44	10	41	0	7	4	2	0	0	445	56	2	48	404	13	1	1077
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	394	75	430	0	49	36	24	0	27	3359	496	3	371	3389	99	13	8765
APPROACH %'s :	43.83%	8.34%	47.83%	0.00%	44.95%	33.03%	22.02%	0.00%	0.69%	86.46%	12.77%	0.08%	9.58%	87.53%	2.56%	0.34%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	218	44	246	0	23	21	13	0	17	1663	255	0	205	1713	52	8	4478
PEAK HR FACTOR :	0.826	0.550	0.854	0.000	0.719	0.438	0.650	0.000	0.607	0.969	0.828	0.000	0.915	0.958	0.591	0.500	0.939
	0.858				0.648				0.952				0.946				

Prepared by National Data & Surveying Services

Castlegate Ln/Placentia Ave & Imperial Hwy

Peak Hour Turning Movement Count

ID: 18-01231-010
City: Brea

Day: Tuesday
Date: 11/13/2018

PEAK HOURS

AM: 07:45 AM - 08:45 AM
NOON: NONE
PM: 04:30 PM - 05:30 PM

COUNT PERIODS

AM: 07:00 AM - 09:00 AM
NOON: NONE
PM: 04:00 PM - 06:00 PM

Castlegate Ln/Placentia Ave

SOUTHBOUND

AM	13	26	23	0	52	AM
NOON	0	0	0	0	0	NOON
PM	13	21	23	0	113	PM

EASTBOUND (Imperial Hwy)

AM	NOON	PM		
1509	0	1944		
1	0	0	0	
11	0	17	1	
1671	0	1663	3	
329	0	255	1	

WESTBOUND (Imperial Hwy)

PM	NOON	AM		
52	0	30	0	
1713	0	1337	3	
205	0	162	1	
8	0	0	0	
1940	0	1828		

CONTROL

Signalized

TEV	3906	0	4478
	AM	NOON	PM
PHF	0.93		0.94

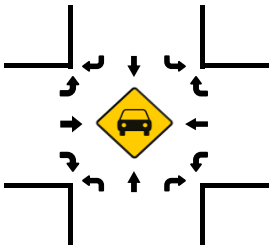
NORTHBOUND

PM	481	0	218	44	246	PM
NOON	0	0	0	0	0	NOON
AM	517	0	158	11	134	AM

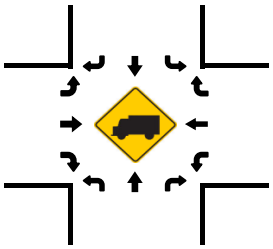
0 1 1 0 — 0 1.5 0.5 1

Castlegate Ln/Placentia Ave

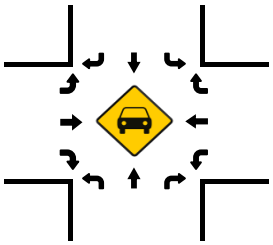
Total Vehicles (AM)



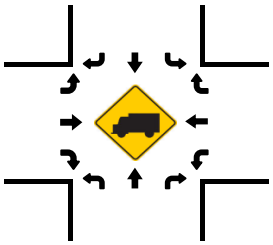
2axle (AM)



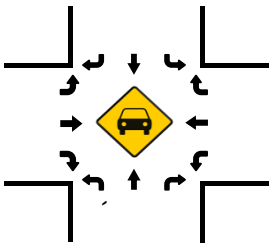
Total Vehicles (Noon)



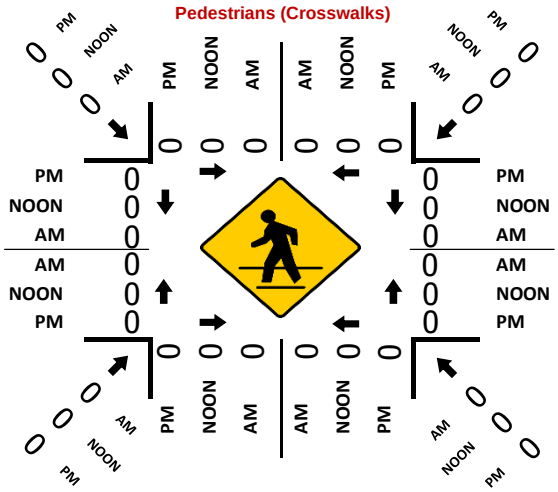
2axle (NOON)



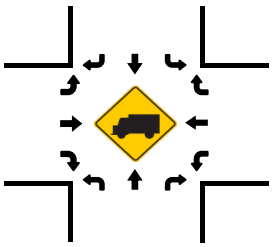
Total Vehicles (PM)



Pedestrians (Crosswalks)



2axle (PM)



INTERSECTION TURNING MOVEMENT COUNTS

T418

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Sat, May 18, 19

LOCATION: Brea
NORTH & SOUTH: Placentia
EAST & WEST: Imperial

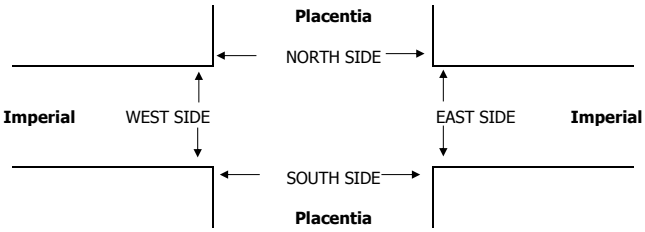
PROJECT #: SC2213
LOCATION #: 5
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER

☑ Add U-Turns to Left Turns

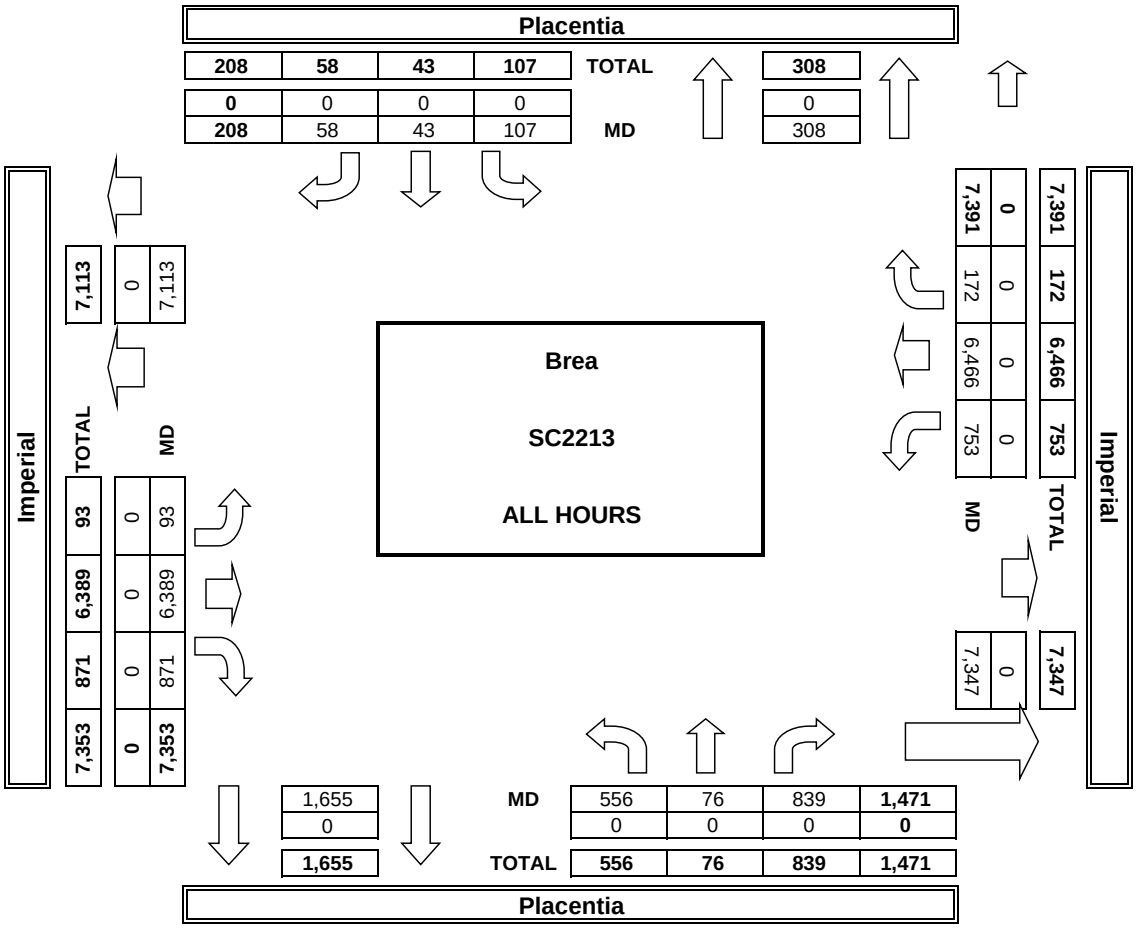
		NORTHBOUND Placentia			SOUTHBOUND Placentia			EASTBOUND Imperial			WESTBOUND Imperial				U-TURNS				
	LANES:	NL 1.5	NT 0.5	NR 1	SL 1	ST 1	SR 0	EL 1	ET 3	ER 1	WL 1	WT 3	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
MD	11:00 AM	47	6	56	9	3	4	8	375	41	46	414	9	1,018	0	0	1	0	1
	11:15 AM	36	8	53	9	0	4	4	382	36	38	440	14	1,024	0	0	0	0	0
	11:30 AM	39	5	48	7	2	2	1	358	40	49	401	7	959	0	0	0	2	2
	11:45 AM	31	5	51	5	2	3	10	413	42	50	427	13	1,052	0	0	3	1	4
	12:00 PM	45	4	48	14	4	2	10	360	49	41	341	9	927	0	0	5	0	5
	12:15 PM	40	4	47	4	5	4	6	398	67	55	357	15	1,002	0	0	2	1	3
	12:30 PM	41	5	56	10	4	7	7	444	69	56	362	15	1,076	0	0	3	1	4
	12:45 PM	36	4	56	4	4	3	5	473	75	53	388	9	1,110	0	0	2	1	3
	1:00 PM	34	4	55	6	1	2	8	389	64	48	384	11	1,006	0	0	5	1	6
	1:15 PM	33	2	56	7	2	3	6	434	46	43	404	10	1,046	0	0	2	0	2
	1:30 PM	36	6	53	7	3	3	4	424	66	46	458	13	1,119	0	0	2	1	3
	1:45 PM	28	3	39	6	4	2	6	409	54	49	399	11	1,010	0	0	1	1	2
	2:00 PM	18	1	51	5	3	6	9	399	61	48	394	16	1,011	0	0	3	0	3
	2:15 PM	34	5	56	4	1	5	3	353	49	50	466	7	1,033	0	0	1	1	2
	2:30 PM	29	9	67	5	2	4	3	391	59	42	412	7	1,030	0	0	1	1	2
	2:45 PM	29	5	47	5	3	4	3	387	53	39	419	6	1,000	0	0	2	1	3
	VOLUMES	556	76	839	107	43	58	93	6,389	871	753	6,466	172	16,423	0	0	33	12	45
	APPROACH %	38%	5%	57%	51%	21%	28%	1%	87%	12%	10%	87%	2%						
	APP/DEPART	1,471	/	308	208	/	1,655	7,353	/	7,347	7,391	/	7,113	0					
	BEGIN PEAK HR		12:45 PM																
	VOLUMES	139	16	220	24	10	11	23	1,720	251	190	1,634	43	4,281					
	APPROACH %	37%	4%	59%	53%	22%	24%	1%	86%	13%	10%	88%	2%						
	PEAK HR FACTOR		0.977			0.865			0.901			0.903		0.956					
	APP/DEPART	375	/	71	45	/	448	1,994	/	1,967	1,867	/	1,795	0					

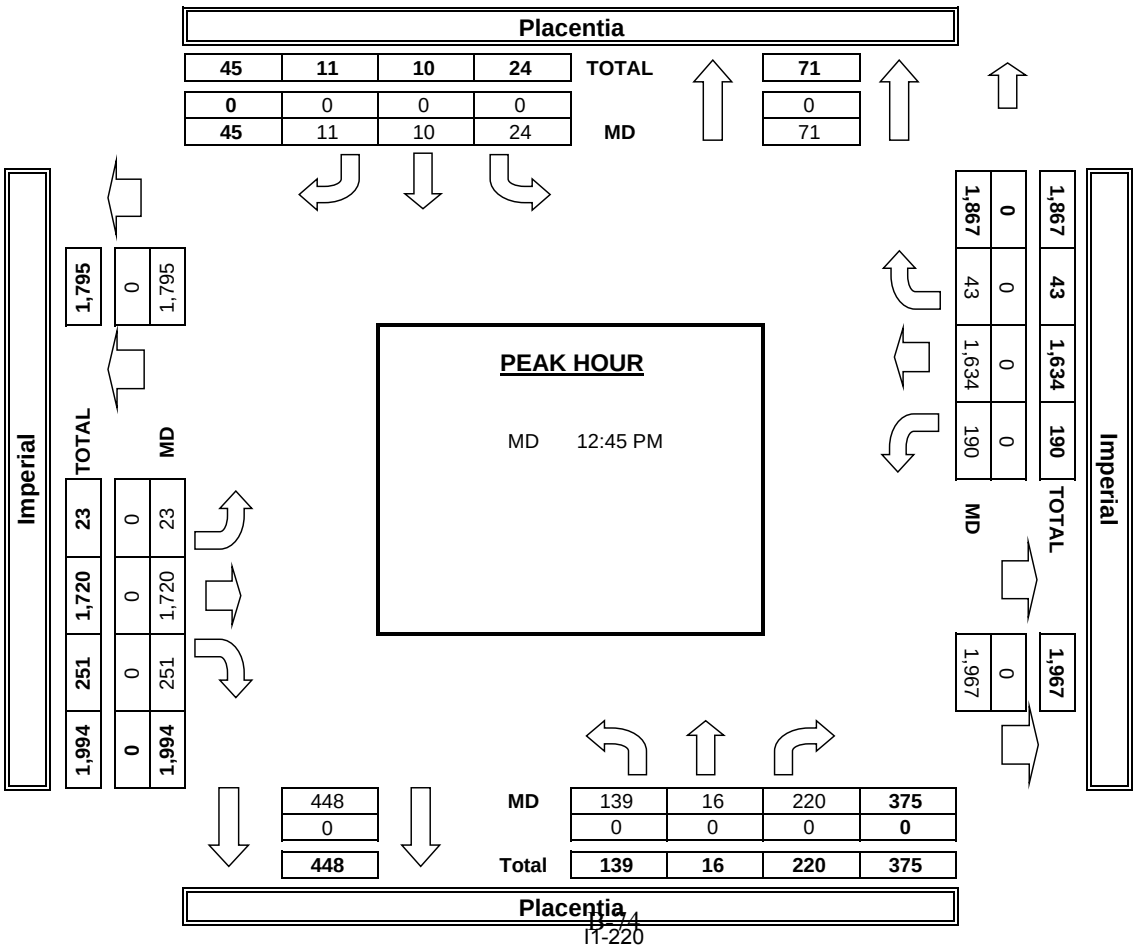


		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
MD	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AM BEGIN PEAK HR	12:45 PM					0	0	0	0	0					

AimTD LLC

TURNING MOVEMENT COUNTS





APPENDIX B-II

EXISTING ROADWAY SEGMENT TRAFFIC COUNT DATA

Prepared by NDS/ATD

VOLUME

Lambert Rd E/O N Brea Blvd

Day: Thursday
Date: 4/19/2018

City: Brea
Project #: CA18_1082_003

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	18,008	18,780	36,788

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			43		43		86		12:00			292		251		543	
00:15			32		27		59		12:15			269		225		494	
00:30			29		32		61		12:30			312		261		573	
00:45			29	133	22	124	51	257	12:45			306	1179	299	1036	605	2215
01:00			18		31		49		13:00			268		243		511	
01:15			24		13		37		13:15			270		248		518	
01:30			57		23		80		13:30			353		276		629	
01:45			58	157	16	83	74	240	13:45			311	1202	260	1027	571	2229
02:00			38		12		50		14:00			286		238		524	
02:15			22		15		37		14:15			294		264		558	
02:30			28		22		50		14:30			366		306		672	
02:45			19	107	30	79	49	186	14:45			275	1221	334	1142	609	2363
03:00			18		29		47		15:00			295		282		577	
03:15			23		35		58		15:15			311		273		584	
03:30			52		76		128		15:30			318		305		623	
03:45			53	146	62	202	115	348	15:45			329	1253	367	1227	696	2480
04:00			33		36		69		16:00			305		333		638	
04:15			43		57		100		16:15			288		389		677	
04:30			78		110		188		16:30			341		368		709	
04:45			139	293	131	334	270	627	16:45			344	1278	384	1474	728	2752
05:00			103		95		198		17:00			362		364		726	
05:15			113		117		230		17:15			338		412		750	
05:30			136		178		314		17:30			327		398		725	
05:45			141	493	186	576	327	1069	17:45			309	1336	377	1551	686	2887
06:00			132		147		279		18:00			304		316		620	
06:15			156		186		342		18:15			292		315		607	
06:30			209		212		421		18:30			276		293		569	
06:45			253	750	315	860	568	1610	18:45			257	1129	301	1225	558	2354
07:00			232		304		536		19:00			216		288		504	
07:15			257		332		589		19:15			232		240		472	
07:30			334		305		639		19:30			221		211		432	
07:45			312	1135	397	1338	709	2473	19:45			239	908	195	934	434	1842
08:00			301		364		665		20:00			207		170		377	
08:15			227		255		482		20:15			180		177		357	
08:30			233		291		524		20:30			157		106		263	
08:45			254	1015	260	1170	514	2185	20:45			118	662	153	606	271	1268
09:00			215		253		468		21:00			150		140		290	
09:15			225		238		463		21:15			135		143		278	
09:30			179		267		446		21:30			96		93		189	
09:45			208	827	233	991	441	1818	21:45			109	490	98	474	207	964
10:00			182		235		417		22:00			112		88		200	
10:15			211		262		473		22:15			81		81		162	
10:30			218		223		441		22:30			103		85		188	
10:45			250	861	226	946	476	1807	22:45			65	361	62	316	127	677
11:00			192		213		405		23:00			50		49		99	
11:15			228		201		429		23:15			27		36		63	
11:30			260		243		503		23:30			59		40		99	
11:45			223	903	242	899	465	1802	23:45			33	169	41	166	74	335
TOTALS				6820		7602		14422	TOTALS				11188		11178		22366
SPLIT %				47.3%		52.7%		39.2%	SPLIT %				50.0%		50.0%		60.8%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	18,008	18,780	36,788

AM Peak Hour			07:15	07:15	07:15	PM Peak Hour			16:30	16:45	16:45
AM Pk Volume			1204	1398	2602	PM Pk Volume			1385	1558	2929
Pk Hr Factor			0.901	0.880	0.917	Pk Hr Factor			0.956	0.945	0.976
7 - 9 Volume	0	0	2150	2508	4658	4 - 6 Volume	0	0	2614	3025	5639
7 - 9 Peak Hour			07:15	07:15	07:15	4 - 6 Peak Hour			16:30	16:45	16:45
7 - 9 Pk Volume	0	0	1204	1398	2602	4 - 6 Pk Volume	0	0	1385	1558	2929
Pk Hr Factor	0.000	0.000	0.901	0.880	0.917	Pk Hr Factor	0.000	0.000	0.956	0.945	0.976

Prepared by NDS/ATD

VOLUME

Lambert Rd W/O Santa Fe Rd/Kraemer Blvd

Day: Tuesday
Date: 11/13/2018

City: Brea
Project #: CA18_1232_003

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	18,802	14,273	33,075

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00					25		8		33		12:00					191		204		395	
00:15					20		2		22		12:15					227		175		402	
00:30					24		8		32		12:30					185		193		378	
00:45					15	84	9	27	24	111	12:45					183	786	181	753	364	1539
01:00					15		6		21		13:00					239		220		459	
01:15					6		6		12		13:15					220		178		398	
01:30					14		1		15		13:30					232		241		473	
01:45					10	45	1	14	11	59	13:45					218	909	188	827	406	1736
02:00					5		3		8		14:00					230		197		427	
02:15					9		9		18		14:15					224		205		429	
02:30					12		8		20		14:30					258		264		522	
02:45					4	30	13	33	17	63	14:45					329	1041	220	886	549	1927
03:00					8		5		13		15:00					320		216		536	
03:15					9		7		16		15:15					337		230		567	
03:30					11		14		25		15:30					383		242		625	
03:45					12	40	13	39	25	79	15:45					366	1406	243	931	609	2337
04:00					19		22		41		16:00					374		286		660	
04:15					35		35		70		16:15					346		271		617	
04:30					55		57		112		16:30					423		305		728	
04:45					99	208	80	194	179	402	16:45					417	1560	291	1153	708	2713
05:00					53		95		148		17:00					407		326		733	
05:15					81		152		233		17:15					398		243		641	
05:30					126		195		321		17:30					397		223		620	
05:45					208	468	173	615	381	1083	17:45					447	1649	230	1022	677	2671
06:00					164		185		349		18:00					390		249		639	
06:15					232		165		397		18:15					342		235		577	
06:30					326		213		539		18:30					398		201		599	
06:45					442	1164	267	830	709	1994	18:45					308	1438	176	861	484	2299
07:00					358		207		565		19:00					311		134		445	
07:15					417		249		666		19:15					273		113		386	
07:30					400		301		701		19:30					211		115		326	
07:45					412	1587	318	1075	730	2662	19:45					200	995	87	449	287	1444
08:00					462		340		802		20:00					185		163		348	
08:15					368		312		680		20:15					160		153		313	
08:30					368		283		651		20:30					146		101		247	
08:45					341	1539	287	1222	628	2761	20:45					159	650	66	483	225	1133
09:00					289		239		528		21:00					135		71		206	
09:15					212		268		480		21:15					124		79		203	
09:30					201		255		456		21:30					79		41		120	
09:45					184	886	225	987	409	1873	21:45					72	410	42	233	114	643
10:00					188		236		424		22:00					81		40		121	
10:15					175		171		346		22:15					59		37		96	
10:30					188		161		349		22:30					67		22		89	
10:45					187	738	171	739	358	1477	22:45					48	255	23	122	71	377
11:00					201		169		370		23:00					42		35		77	
11:15					182		187		369		23:15					29		19		48	
11:30					196		163		359		23:30					33		25		58	
11:45					208	787	162	681	370	1468	23:45					23	127	18	97	41	224
TOTALS						7576		6456		14032	TOTALS						11226		7817		19043
SPLIT %						54.0%		46.0%		42.4%	SPLIT %						59.0%		41.0%		57.6%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	18,802	14,273	33,075

AM Peak Hour			07:15	07:30	07:30	PM Peak Hour			17:00	16:15	16:30
AM Pk Volume			1691	1271	2913	PM Pk Volume			1649	1193	2810
Pk Hr Factor			0.915	0.935	0.908	Pk Hr Factor			0.922	0.915	0.958
7 - 9 Volume	0	0	3126	2297	5423	4 - 6 Volume	0	0	3209	2175	5384
7 - 9 Peak Hour			07:15	07:30	07:30	4 - 6 Peak Hour			17:00	16:15	16:30
7 - 9 Pk Volume	0	0	1691	1271	2913	4 - 6 Pk Volume	0	0	1649	1193	2810
Pk Hr Factor	0.000	0.000	0.915	0.935	0.908	Pk Hr Factor	0.000	0.000	0.922	0.915	0.958

Prepared by NDS/ATD

VOLUME

Birch St E/O Brea Blvd

Day: Thursday
Date: 4/19/2018

City: Brea
Project #: CA18_1082_007

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	7,982	9,630	17,612

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			10		19		29		12:00			152		162		314	
00:15			7		10		17		12:15			154		185		339	
00:30			12		4		16		12:30			130		183		313	
00:45			3	32	11	44	14	76	12:45			128	564	244	774	372	1338
01:00			4		6		10		13:00			120		178		298	
01:15			3		5		8		13:15			128		152		280	
01:30			0		6		6		13:30			136		138		274	
01:45			1	8	0	17	1	25	13:45			138	522	176	644	314	1166
02:00			0		3		3		14:00			127		201		328	
02:15			2		2		4		14:15			168		166		334	
02:30			2		1		3		14:30			123		135		258	
02:45			1	5	1	7	2	12	14:45			129	547	225	727	354	1274
03:00			1		2		3		15:00			165		216		381	
03:15			5		2		7		15:15			153		196		349	
03:30			3		3		6		15:30			152		216		368	
03:45			5	14	4	11	9	25	15:45			172	642	230	858	402	1500
04:00			3		2		5		16:00			156		204		360	
04:15			4		6		10		16:15			163		239		402	
04:30			6		8		14		16:30			156		216		372	
04:45			12	25	13	29	25	54	16:45			191	666	210	869	401	1535
05:00			16		17		33		17:00			177		229		406	
05:15			12		20		32		17:15			181		227		408	
05:30			25		20		45		17:30			152		224		376	
05:45			34	87	39	96	73	183	17:45			148	658	223	903	371	1561
06:00			32		32		64		18:00			163		196		359	
06:15			26		32		58		18:15			136		160		296	
06:30			74		82		156		18:30			144		169		313	
06:45			62	194	91	237	153	431	18:45			141	584	145	670	286	1254
07:00			76		90		166		19:00			130		161		291	
07:15			90		103		193		19:15			140		136		276	
07:30			151		128		279		19:30			104		168		272	
07:45			165	482	180	501	345	983	19:45			87	461	125	590	212	1051
08:00			121		116		237		20:00			85		105		190	
08:15			109		100		209		20:15			78		131		209	
08:30			92		95		187		20:30			81		75		156	
08:45			119	441	123	434	242	875	20:45			67	311	87	398	154	709
09:00			71		88		159		21:00			83		86		169	
09:15			101		101		202		21:15			49		55		104	
09:30			75		82		157		21:30			71		48		119	
09:45			106	353	116	387	222	740	21:45			70	273	45	234	115	507
10:00			74		101		175		22:00			58		35		93	
10:15			93		85		178		22:15			35		30		65	
10:30			101		121		222		22:30			32		32		64	
10:45			116	384	132	439	248	823	22:45			15	140	29	126	44	266
11:00			118		140		258		23:00			19		13		32	
11:15			138		140		278		23:15			18		13		31	
11:30			129		138		267		23:30			11		13		24	
11:45			145	530	168	586	313	1116	23:45			11	59	10	49	21	108
TOTALS				2555		2788		5343	TOTALS				5427		6842		12269
SPLIT %				47.8%		52.2%		30.3%	SPLIT %				44.2%		55.8%		69.7%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	7,982	9,630	17,612

AM Peak Hour			11:45	11:45	11:45	PM Peak Hour			16:30	17:00	16:45
AM Pk Volume			581	698	1279	PM Pk Volume			705	903	1591
Pk Hr Factor			0.943	0.943	0.943	Pk Hr Factor			0.923	0.986	0.975
7 - 9 Volume	0	0	923	935	1858	4 - 6 Volume	0	0	1324	1772	3096
7 - 9 Peak Hour			07:30	07:15	07:30	4 - 6 Peak Hour			16:30	17:00	16:45
7 - 9 Pk Volume	0	0	546	527	1070	4 - 6 Pk Volume	0	0	705	903	1591
Pk Hr Factor	0.000	0.000	0.827	0.732	0.775	Pk Hr Factor	0.000	0.000	0.923	0.986	0.975

Prepared by NDS/ATD

VOLUME

Birch St E/O Randolph Ave

Day: Thursday
Date: 5/16/2019

City: Brea
Project #: CA19_1100_001

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	9,018	10,323	19,341

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			14		16		30		12:00			142		175		317	
00:15			6		6		12		12:15			148		167		315	
00:30			4		9		13		12:30			159		163		322	
00:45			1	25	7	38	8	63	12:45			159	608	183	688	342	1296
01:00			4		8		12		13:00			161		168		329	
01:15			4		7		11		13:15			161		190		351	
01:30			4		0		4		13:30			161		160		321	
01:45			3	15	3	18	6	33	13:45			159	642	192	710	351	1352
02:00			1		1		2		14:00			137		202		339	
02:15			3		8		11		14:15			180		183		363	
02:30			3		4		7		14:30			160		176		336	
02:45			5	12	2	15	7	27	14:45			142	619	270	831	412	1450
03:00			2		7		9		15:00			161		237		398	
03:15			8		5		13		15:15			174		207		381	
03:30			9		2		11		15:30			174		204		378	
03:45			14	33	10	24	24	57	15:45			178	687	221	869	399	1556
04:00			8		4		12		16:00			159		238		397	
04:15			7		4		11		16:15			175		275		450	
04:30			9		9		18		16:30			180		250		430	
04:45			18	42	7	24	25	66	16:45			197	711	270	1033	467	1744
05:00			11		11		22		17:00			206		268		474	
05:15			25		14		39		17:15			177		283		460	
05:30			20		20		40		17:30			184		252		436	
05:45			44	100	38	83	82	183	17:45			168	735	268	1071	436	1806
06:00			33		42		75		18:00			170		210		380	
06:15			42		44		86		18:15			161		191		352	
06:30			97		44		141		18:30			155		186		341	
06:45			107	279	81	211	188	490	18:45			134	620	196	783	330	1403
07:00			108		60		168		19:00			141		171		312	
07:15			117		84		201		19:15			116		156		272	
07:30			189		113		302		19:30			135		134		269	
07:45			198	612	184	441	382	1053	19:45			100	492	122	583	222	1075
08:00			160		154		314		20:00			106		118		224	
08:15			122		103		225		20:15			107		112		219	
08:30			115		122		237		20:30			79		112		191	
08:45			107	504	116	495	223	999	20:45			88	380	109	451	197	831
09:00			97		103		200		21:00			79		110		189	
09:15			111		79		190		21:15			75		91		166	
09:30			97		92		189		21:30			58		64		122	
09:45			115	420	98	372	213	792	21:45			45	257	64	329	109	586
10:00			133		104		237		22:00			57		54		111	
10:15			121		108		229		22:15			23		43		66	
10:30			104		103		207		22:30			32		28		60	
10:45			126	484	113	428	239	912	22:45			24	136	31	156	55	292
11:00			125		137		262		23:00			19		42		61	
11:15			122		139		261		23:15			18		16		34	
11:30			121		149		270		23:30			10		10		20	
11:45			169	537	163	588	332	1125	23:45			21	68	14	82	35	150
TOTALS				3063		2737		**5800**	**TOTALS**				5955		7586		**13541**
SPLIT %				52.8%		47.2%		**30.0%**	**SPLIT %**				44.0%		56.0%		**70.0%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	9,018	10,323	19,341

AM Peak Hour			07:30	11:45	**11:45**	**PM Peak Hour**			16:45	16:45	**16:45**
AM Pk Volume			669	668	**1286**	**PM Pk Volume**			764	1073	**1837**
Pk Hr Factor			0.845	0.954	**0.968**	**Pk Hr Factor**			0.927	0.948	**0.969**
7 - 9 Volume	0	0	1116	936	**2052**	**4 - 6 Volume**	0	0	1446	2104	**3550**
7 - 9 Peak Hour			07:30	07:45	**07:30**	**4 - 6 Peak Hour**			16:45	16:45	**16:45**
7 - 9 Pk Volume	0	0	669	563	**1223**	**4 - 6 Pk Volume**	0	0	764	1073	**1837**
Pk Hr Factor	0.000	0.000	0.845	0.765	**0.800**	**Pk Hr Factor**	0.000	0.000	0.927	0.948	**0.969**

Prepared by NDS/ATD

VOLUME

Birch St E/O Randolph Ave

Day: Saturday
Date: 5/18/2019

City: Brea
Project #: CA19_1100_001

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	8,068	9,284	17,352

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			17		22		39		12:00			179		221		400	
00:15			19		22		41		12:15			166		219		385	
00:30			10		18		28		12:30			194		208		402	
00:45			8	54	11	73	19	127	12:45			185	724	195	843	380	1567
01:00			12		11		23		13:00			174		217		391	
01:15			7		10		17		13:15			164		185		349	
01:30			10		5		15		13:30			187		185		372	
01:45			8	37	7	33	15	70	13:45			173	698	184	771	357	1469
02:00			6		3		9		14:00			160		168		328	
02:15			3		12		15		14:15			160		214		374	
02:30			9		3		12		14:30			167		177		344	
02:45			2	20	3	21	5	41	14:45			164	651	212	771	376	1422
03:00			3		1		4		15:00			155		224		379	
03:15			6		3		9		15:15			163		184		347	
03:30			2		2		4		15:30			155		210		365	
03:45			5	16	4	10	9	26	15:45			158	631	192	810	350	1441
04:00			5		4		9		16:00			150		194		344	
04:15			3		0		3		16:15			141		191		332	
04:30			7		5		12		16:30			142		157		299	
04:45			9	24	4	13	13	37	16:45			165	598	188	730	353	1328
05:00			5		6		11		17:00			120		187		307	
05:15			11		7		18		17:15			141		186		327	
05:30			14		11		25		17:30			143		134		277	
05:45			21	51	12	36	33	87	17:45			115	519	162	669	277	1188
06:00			9		13		22		18:00			134		160		294	
06:15			27		16		43		18:15			118		160		278	
06:30			23		20		43		18:30			117		155		272	
06:45			35	94	30	79	65	173	18:45			133	502	161	636	294	1138
07:00			22		24		46		19:00			132		129		261	
07:15			44		32		76		19:15			101		145		246	
07:30			38		42		80		19:30			87		145		232	
07:45			62	166	49	147	111	313	19:45			88	408	126	545	214	953
08:00			65		40		105		20:00			96		120		216	
08:15			55		56		111		20:15			91		109		200	
08:30			90		78		168		20:30			77		104		181	
08:45			109	319	94	268	203	587	20:45			83	347	96	429	179	776
09:00			100		94		194		21:00			94		112		206	
09:15			112		92		204		21:15			62		86		148	
09:30			102		102		204		21:30			62		79		141	
09:45			133	447	144	432	277	879	21:45			54	272	76	353	130	625
10:00			145		129		274		22:00			51		58		109	
10:15			138		127		265		22:15			45		59		104	
10:30			114		154		268		22:30			40		46		86	
10:45			141	538	166	576	307	1114	22:45			37	173	36	199	73	372
11:00			142		157		299		23:00			30		36		66	
11:15			169		159		328		23:15			31		32		63	
11:30			164		170		334		23:30			33		35		68	
11:45			183	658	215	701	398	1359	23:45			27	121	36	139	63	260
TOTALS				2424		2389		4813	TOTALS				5644		6895		12539
SPLIT %				50.4%		49.6%		27.7%	SPLIT %				45.0%		55.0%		72.3%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	8,068	9,284	17,352

AM Peak Hour			11:45	11:45	11:45	PM Peak Hour			12:00	12:00	12:00
AM Pk Volume			722	863	1585	PM Pk Volume			724	843	1567
Pk Hr Factor			0.930	0.976	0.986	Pk Hr Factor			0.933	0.954	0.975
7 - 9 Volume	0	0	485	415	900	4 - 6 Volume	0	0	1117	1399	2516
7 - 9 Peak Hour			08:00	08:00	08:00	4 - 6 Peak Hour			16:00	16:00	16:00
7 - 9 Pk Volume	0	0	319	268	587	4 - 6 Pk Volume	0	0	598	730	1328
Pk Hr Factor	0.000	0.000	0.732	0.713	0.723	Pk Hr Factor	0.000	0.000	0.906	0.941	0.941

Prepared by NDS/ATD

VOLUME

Birch St E/O State College Blvd

Day: Tuesday
Date: 11/13/2018

City: Brea
Project #: CA18_1232_007

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	12,499	11,971	24,470

AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL
00:00			14	7	21	12:00			220	192	412
00:15			6	10	16	12:15			205	191	396
00:30			8	2	10	12:30			199	182	381
00:45			4	32 6	25 10	57 12:45			230	854 215	780 445	1634
01:00			4	2	6	13:00			193	179	372
01:15			10	2	12	13:15			199	164	363
01:30			2	2	4	13:30			219	166	385
01:45			5	21 1	7 6	28 13:45			242	853 177	686 419	1539
02:00			1	3	4	14:00			255	159	414
02:15			1	4	5	14:15			231	190	421
02:30			1	0	1	14:30			246	214	460
02:45			2	5 1	8 3	13 14:45			246	978 268	831 514	1809
03:00			1	2	3	15:00			303	247	550
03:15			1	7	8	15:15			314	230	544
03:30			2	8	10	15:30			252	243	495
03:45			4	8 13	30 17	38 15:45			228	1097 282	1002 510	2099
04:00			3	8	11	16:00			225	271	496
04:15			8	18	26	16:15			272	277	549
04:30			18	11	29	16:30			250	358	608
04:45			22	51 24	61 46	112 16:45			275	1022 400	1306 675	2328
05:00			11	18	29	17:00			266	384	650
05:15			25	24	49	17:15			295	388	683
05:30			29	34	63	17:30			272	360	632
05:45			77	142 58	134 135	276 17:45			244	1077 300	1432 544	2509
06:00			62	29	91	18:00			244	263	507
06:15			101	70	171	18:15			245	217	462
06:30			171	92	263	18:30			194	213	407
06:45			226	560 94	285 320	845 18:45			216	899 174	867 390	1766
07:00			211	128	339	19:00			163	133	296
07:15			228	145	373	19:15			151	135	286
07:30			308	190	498	19:30			136	98	234
07:45			318	1065 278	741 596	1806 19:45			115	565 103	469 218	1034
08:00			285	246	531	20:00			116	76	192
08:15			187	220	407	20:15			114	83	197
08:30			143	185	328	20:30			125	74	199
08:45			159	774 194	845 353	1619 20:45			115	470 76	309 191	779
09:00			146	156	302	21:00			73	51	124
09:15			103	138	241	21:15			68	25	93
09:30			112	131	243	21:30			58	26	84
09:45			110	471 178	603 288	1074 21:45			47	246 28	130 75	376
10:00			110	158	268	22:00			52	33	85
10:15			119	121	240	22:15			34	25	59
10:30			140	156	296	22:30			36	19	55
10:45			134	503 138	573 272	1076 22:45			17	139 12	89 29	228
11:00			150	152	302	23:00			25	15	40
11:15			144	167	311	23:15			18	10	28
11:30			158	200	358	23:30			8	7	15
11:45			154	606 199	718 353	1324 23:45			10	61 8	40 18	101
TOTALS				4238	4030	8268	TOTALS			8261	7941	16202
SPLIT %				51.3%	48.7%	33.8%	SPLIT %			51.0%	49.0%	66.2%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	12,499	11,971	24,470

AM Peak Hour			07:15	07:30	07:30	PM Peak Hour			14:45	16:45	16:45
AM Pk Volume			1139	934	2032	PM Pk Volume			1115	1532	2640
Pk Hr Factor			0.895	0.840	0.852	Pk Hr Factor			0.888	0.958	0.966
7 - 9 Volume	0	0	1839	1586	3425	4 - 6 Volume	0	0	2099	2738	4837
7 - 9 Peak Hour			07:15	07:30	07:30	4 - 6 Peak Hour			16:45	16:45	16:45
7 - 9 Pk Volume	0	0	1139	934	2032	4 - 6 Pk Volume	0	0	1108	1532	2640
Pk Hr Factor	0.000	0.000	0.895	0.840	0.852	Pk Hr Factor	0.000	0.000	0.939	0.958	0.966

Prepared by NDS/ATD

VOLUME

Birch St E/O S Associated Rd

Day: Tuesday
Date: 11/13/2018

City: Brea
Project #: CA18_1232_008

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	12,383	11,595	23,978

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			13		6		19		12:00			201		199		400	
00:15			10		10		20		12:15			187		185		372	
00:30			6		1		7		12:30			175		147		322	
00:45			3	32	3	20	6	52	12:45			215	778	177	708	392	1486
01:00			6		4		10		13:00			163		161		324	
01:15			4		3		7		13:15			215		145		360	
01:30			2		4		6		13:30			205		180		385	
01:45			5	17	2	13	7	30	13:45			242	825	160	646	402	1471
02:00			0		2		2		14:00			248		153		401	
02:15			3		2		5		14:15			239		166		405	
02:30			2		1		3		14:30			278		206		484	
02:45			6	11	1	6	7	17	14:45			256	1021	307	832	563	1853
03:00			6		4		10		15:00			310		233		543	
03:15			1		9		10		15:15			280		185		465	
03:30			4		15		19		15:30			242		266		508	
03:45			5	16	10	38	15	54	15:45			237	1069	248	932	485	2001
04:00			2		7		9		16:00			218		268		486	
04:15			16		13		29		16:15			254		264		518	
04:30			32		18		50		16:30			265		320		585	
04:45			31	81	24	62	55	143	16:45			265	1002	324	1176	589	2178
05:00			18		20		38		17:00			269		365		634	
05:15			29		26		55		17:15			294		368		662	
05:30			31		47		78		17:30			284		344		628	
05:45			92	170	64	157	156	327	17:45			263	1110	278	1355	541	2465
06:00			75		49		124		18:00			235		224		459	
06:15			97		97		194		18:15			242		193		435	
06:30			214		108		322		18:30			186		193		379	
06:45			256	642	147	401	403	1043	18:45			208	871	141	751	349	1622
07:00			202		164		366		19:00			173		112		285	
07:15			215		165		380		19:15			137		123		260	
07:30			282		223		505		19:30			123		96		219	
07:45			335	1034	296	848	631	1882	19:45			96	529	87	418	183	947
08:00			292		271		563		20:00			114		81		195	
08:15			275		246		521		20:15			109		77		186	
08:30			148		188		336		20:30			112		57		169	
08:45			147	862	182	887	329	1749	20:45			93	428	65	280	158	708
09:00			133		157		290		21:00			75		50		125	
09:15			101		126		227		21:15			68		22		90	
09:30			107		134		241		21:30			48		31		79	
09:45			110	451	158	575	268	1026	21:45			54	245	27	130	81	375
10:00			97		145		242		22:00			45		23		68	
10:15			111		122		233		22:15			38		32		70	
10:30			124		148		272		22:30			35		22		57	
10:45			126	458	142	557	268	1015	22:45			17	135	15	92	32	227
11:00			133		135		268		23:00			27		15		42	
11:15			125		159		284		23:15			14		14		28	
11:30			123		189		312		23:30			13		15		28	
11:45			154	535	175	658	329	1193	23:45			7	61	9	53	16	114
TOTALS				4309		4222		8531	TOTALS				8074		7373		15447
SPLIT %				50.5%		49.5%		35.6%	SPLIT %				52.3%		47.7%		64.4%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	12,383	11,595	23,978

AM Peak Hour			07:30	07:30	07:30	PM Peak Hour			14:30	16:45	16:45
AM Pk Volume			1184	1036	2220	PM Pk Volume			1124	1401	2513
Pk Hr Factor			0.884	0.875	0.880	Pk Hr Factor			0.906	0.952	0.949
7 - 9 Volume	0	0	1896	1735	3631	4 - 6 Volume	0	0	2112	2531	4643
7 - 9 Peak Hour			07:30	07:30	07:30	4 - 6 Peak Hour			16:45	16:45	16:45
7 - 9 Pk Volume	0	0	1184	1036	2220	4 - 6 Pk Volume	0	0	1112	1401	2513
Pk Hr Factor	0.000	0.000	0.884	0.875	0.880	Pk Hr Factor	0.000	0.000	0.946	0.952	0.949

Prepared by NDS/ATD

VOLUME

Randolph Ave S/O Birch St

Day: Thursday
Date: 5/16/2019

City: Brea
Project #: CA19_1100_002

DAILY TOTALS	NB	SB	EB	WB	Total
	3,686	3,446	0	0	7,132

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	11		2				13		12:00	60		76				136	
00:15	2		1				3		12:15	65		46				111	
00:30	3		4				7		12:30	79		72				151	
00:45	2	18	3	10			5	28	12:45	66	270	70	264			136	534
01:00	4		3				7		13:00	92		54				146	
01:15	1		1				2		13:15	77		76				153	
01:30	0		1				1		13:30	71		58				129	
01:45	3	8	0	5			3	13	13:45	73	313	50	238			123	551
02:00	1		1				2		14:00	73		66				139	
02:15	2		3				5		14:15	71		77				148	
02:30	2		1				3		14:30	84		69				153	
02:45	1	6	0	5			1	11	14:45	61	289	63	275			124	564
03:00	1		6				7		15:00	59		71				130	
03:15	7		2				9		15:15	76		61				137	
03:30	0		1				1		15:30	71		70				141	
03:45	9	17	3	12			12	29	15:45	81	287	62	264			143	551
04:00	4		4				8		16:00	77		64				141	
04:15	1		3				4		16:15	86		70				156	
04:30	2		4				6		16:30	67		86				153	
04:45	8	15	8	19			16	34	16:45	106	336	83	303			189	639
05:00	4		4				8		17:00	80		81				161	
05:15	7		11				18		17:15	76		85				161	
05:30	6		13				19		17:30	84		49				133	
05:45	4	21	27	55			31	76	17:45	65	305	72	287			137	592
06:00	15		25				40		18:00	86		52				138	
06:15	8		23				31		18:15	82		60				142	
06:30	12		24				36		18:30	58		57				115	
06:45	14	49	39	111			53	160	18:45	58	284	48	217			106	501
07:00	29		21				50		19:00	59		53				112	
07:15	19		37				56		19:15	52		38				90	
07:30	29		31				60		19:30	60		36				96	
07:45	36	113	40	129			76	242	19:45	53	224	32	159			85	383
08:00	33		45				78		20:00	54		36				90	
08:15	41		40				81		20:15	42		33				75	
08:30	36		51				87		20:30	57		32				89	
08:45	38	148	54	190			92	338	20:45	39	192	33	134			72	326
09:00	26		36				62		21:00	41		15				56	
09:15	29		44				73		21:15	45		18				63	
09:30	27		47				74		21:30	25		19				44	
09:45	41	123	50	177			91	300	21:45	20	131	13	65			33	196
10:00	48		54				102		22:00	25		7				32	
10:15	51		56				107		22:15	19		10				29	
10:30	33		53				86		22:30	18		10				28	
10:45	39	171	60	223			99	394	22:45	17	79	8	35			25	114
11:00	62		56				118		23:00	17		8				25	
11:15	54		63				117		23:15	7		2				9	
11:30	52		70				122		23:30	6		5				11	
11:45	76	244	62	251			138	495	23:45	13	43	3	18			16	61
TOTALS		933		1187				2120	TOTALS		2753		2259				5012
SPLIT %		44.0%		56.0%				29.7%	SPLIT %		54.9%		45.1%				70.3%

DAILY TOTALS	NB	SB	EB	WB	Total
	3,686	3,446	0	0	7,132

AM Peak Hour	11:45	11:15				11:45	PM Peak Hour	16:45	16:30				16:30
AM Pk Volume	280	271				536	PM Pk Volume	346	335				664
Pk Hr Factor	0.886	0.891				0.887	Pk Hr Factor	0.816	0.974				0.878
7 - 9 Volume	261	319	0	0		580	4 - 6 Volume	641	590	0	0		1231
7 - 9 Peak Hour	08:00	08:00				08:00	4 - 6 Peak Hour	16:45	16:30				16:30
7 - 9 Pk Volume	148	190	0	0		338	4 - 6 Pk Volume	346	335	0	0		664
Pk Hr Factor	0.902	0.880	0.000	0.000		0.918	Pk Hr Factor	0.816	0.974	0.000	0.000		0.878

Prepared by NDS/ATD

VOLUME

Randolph Ave S/O Birch St

Day: Saturday
Date: 5/18/2019

City: Brea
Project #: CA19_1100_002

DAILY TOTALS	NB	SB	EB	WB	Total
	3,869	3,404	0	0	7,273

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	6		7				13		12:00	96		88				184	
00:15	12		2				14		12:15	75		77				152	
00:30	9		9				18		12:30	75		69				144	
00:45	4	31	0	18			4	49	12:45	89	335	79	313			168	648
01:00	2		3				5		13:00	79		97				176	
01:15	10		2				12		13:15	102		59				161	
01:30	6		1				7		13:30	85		72				157	
01:45	6	24	2	8			8	32	13:45	90	356	87	315			177	671
02:00	1		2				3		14:00	76		84				160	
02:15	3		3				6		14:15	82		93				175	
02:30	0		1				1		14:30	108		62				170	
02:45	2	6	1	7			3	13	14:45	74	340	80	319			154	659
03:00	2		2				4		15:00	102		77				179	
03:15	1		2				3		15:15	101		65				166	
03:30	2		0				2		15:30	80		65				145	
03:45	8	13	2	6			10	19	15:45	89	372	59	266			148	638
04:00	3		5				8		16:00	85		70				155	
04:15	7		2				9		16:15	63		59				122	
04:30	1		1				2		16:30	73		49				122	
04:45	6	17	3	11			9	28	16:45	79	300	46	224			125	524
05:00	1		10				11		17:00	67		63				130	
05:15	10		2				12		17:15	75		55				130	
05:30	4		6				10		17:30	71		43				114	
05:45	6	21	6	24			12	45	17:45	55	268	41	202			96	470
06:00	3		6				9		18:00	61		38				99	
06:15	5		10				15		18:15	43		42				85	
06:30	8		12				20		18:30	60		40				100	
06:45	10	26	16	44			26	70	18:45	56	220	48	168			104	388
07:00	9		12				21		19:00	58		28				86	
07:15	14		10				24		19:15	38		31				69	
07:30	19		30				49		19:30	54		35				89	
07:45	21	63	28	80			49	143	19:45	42	192	32	126			74	318
08:00	27		28				55		20:00	49		31				80	
08:15	31		22				53		20:15	51		23				74	
08:30	33		43				76		20:30	55		28				83	
08:45	35	126	53	146			88	272	20:45	43	198	27	109			70	307
09:00	40		43				83		21:00	46		24				70	
09:15	55		56				111		21:15	25		16				41	
09:30	42		37				79		21:30	28		12				40	
09:45	62	199	90	226			152	425	21:45	26	125	19	71			45	196
10:00	53		66				119		22:00	23		22				45	
10:15	54		75				129		22:15	21		13				34	
10:30	58		77				135		22:30	13		15				28	
10:45	56	221	94	312			150	533	22:45	20	77	7	57			27	134
11:00	65		81				146		23:00	15		10				25	
11:15	80		69				149		23:15	11		11				22	
11:30	78		75				153		23:30	14		6				20	
11:45	61	284	95	320			156	604	23:45	15	55	5	32			20	87
TOTALS		1031		1202				2233	TOTALS		2838		2202				5040
SPLIT %		46.2%		53.8%				30.7%	SPLIT %		56.3%		43.7%				69.3%

DAILY TOTALS	NB	SB	EB	WB	Total
	3,869	3,404	0	0	7,273

AM Peak Hour	11:15	11:30			11:30	PM Peak Hour	14:30	13:30			13:45
AM Pk Volume	315	335			645	PM Pk Volume	385	336			682
Pk Hr Factor	0.820	0.882			0.876	Pk Hr Factor	0.891	0.903			0.963
7 - 9 Volume	189	226	0	0	415	4 - 6 Volume	568	426	0	0	994
7 - 9 Peak Hour	08:00	08:00			08:00	4 - 6 Peak Hour	16:00	16:00			16:00
7 - 9 Pk Volume	126	146	0	0	272	4 - 6 Pk Volume	300	224	0	0	524
Pk Hr Factor	0.900	0.689	0.000	0.000	0.773	Pk Hr Factor	0.882	0.800	0.000	0.000	0.845

Prepared by NDS/ATD

VOLUME

State College Blvd S/O Birch St

Day: Thursday
Date: 5/16/2019

City: Brea
Project #: CA19_1100_003

DAILY TOTALS	NB	SB	EB	WB	Total
	6,005	7,452	0	0	13,457

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00	10		7						17		12:00	80		105						185	
00:15	7		5						12		12:15	79		142						221	
00:30	4		7						11		12:30	106		129						235	
00:45	9	30	4	23					13	53	12:45	124	389	117	493					241	882
01:00	3		1						4		13:00	127		118						245	
01:15	0		1						1		13:15	139		111						250	
01:30	6		3						9		13:30	123		122						245	
01:45	5	14	2	7					7	21	13:45	119	508	125	476					244	984
02:00	2		1						3		14:00	121		109						230	
02:15	1		4						5		14:15	104		102						206	
02:30	2		5						7		14:30	104		109						213	
02:45	2	7	3	13					5	20	14:45	101	430	127	447					228	877
03:00	1		1						2		15:00	99		142						241	
03:15	2		4						6		15:15	123		120						243	
03:30	3		2						5		15:30	131		128						259	
03:45	1	7	5	12					6	19	15:45	133	486	122	512					255	998
04:00	4		1						5		16:00	107		137						244	
04:15	5		6						11		16:15	132		105						237	
04:30	4		9						13		16:30	123		140						263	
04:45	2	15	10	26					12	41	16:45	140	502	126	508					266	1010
05:00	9		9						18		17:00	129		127						256	
05:15	7		8						15		17:15	146		130						276	
05:30	10		22						32		17:30	138		126						264	
05:45	19	45	39	78					58	123	17:45	133	546	143	526					276	1072
06:00	8		44						52		18:00	131		131						262	
06:15	14		59						73		18:15	140		113						253	
06:30	27		100						127		18:30	123		131						254	
06:45	45	94	137	340					182	434	18:45	114	508	108	483					222	991
07:00	42		109						151		19:00	132		115						247	
07:15	46		119						165		19:15	100		95						195	
07:30	54		148						202		19:30	94		124						218	
07:45	44	186	146	522					190	708	19:45	94	420	66	400					160	820
08:00	61		147						208		20:00	89		91						180	
08:15	57		152						209		20:15	92		73						165	
08:30	58		122						180		20:30	90		62						152	
08:45	52	228	137	558					189	786	20:45	90	361	67	293					157	654
09:00	48		124						172		21:00	113		60						173	
09:15	60		103						163		21:15	72		53						125	
09:30	41		116						157		21:30	58		30						88	
09:45	51	200	116	459					167	659	21:45	33	276	37	180					70	456
10:00	55		119						174		22:00	49		32						81	
10:15	54		105						159		22:15	27		18						45	
10:30	52		117						169		22:30	22		16						38	
10:45	86	247	126	467					212	714	22:45	23	121	19	85					42	206
11:00	64		124						188		23:00	21		18						39	
11:15	75		122						197		23:15	22		11						33	
11:30	81		124						205		23:30	17		7						24	
11:45	94	314	133	503					227	817	23:45	11	71	5	41					16	112
TOTALS		1387		3008						4395	TOTALS		4618		4444						9062
SPLIT %		31.6%		68.4%						32.7%	SPLIT %		51.0%		49.0%						67.3%

DAILY TOTALS	NB	SB	EB	WB	Total
	6,005	7,452	0	0	13,457

AM Peak Hour	11:45	07:30			11:45	PM Peak Hour	16:45	17:15			17:15
AM Pk Volume	359	593			868	PM Pk Volume	553	530			1078
Pk Hr Factor	0.847	0.975			0.923	Pk Hr Factor	0.947	0.927			0.976
7 - 9 Volume	414	1080	0	0	1494	4 - 6 Volume	1048	1034	0	0	2082
7 - 9 Peak Hour	08:00	07:30			07:30	4 - 6 Peak Hour	16:45	17:00			17:00
7 - 9 Pk Volume	228	593	0	0	809	4 - 6 Pk Volume	553	526	0	0	1072
Pk Hr Factor	0.934	0.975	0.000	0.000	0.968	Pk Hr Factor	0.947	0.920	0.000	0.000	0.971

Prepared by NDS/ATD

VOLUME

State College Blvd S/O Birch St

Day: Saturday
Date: 5/18/2019

City: Brea
Project #: CA19_1100_003

DAILY TOTALS	NB	SB	EB	WB	Total
	6,548	7,440	0	0	13,988

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	22		12				34		12:00	106		195				301	
00:15	15		14				29		12:15	139		180				319	
00:30	19		12				31		12:30	144		218				362	
00:45	18	74	8	46			26	120	12:45	131	520	201	794			332	1314
01:00	16		4				20		13:00	134		146				280	
01:15	9		7				16		13:15	154		165				319	
01:30	6		7				13		13:30	151		177				328	
01:45	5	36	1	19			6	55	13:45	137	576	186	674			323	1250
02:00	5		6				11		14:00	141		132				273	
02:15	4		1				5		14:15	137		154				291	
02:30	0		4				4		14:30	162		138				300	
02:45	2	11	6	17			8	28	14:45	148	588	177	601			325	1189
03:00	3		2				5		15:00	131		152				283	
03:15	7		0				7		15:15	163		154				317	
03:30	1		2				3		15:30	137		163				300	
03:45	2	13	5	9			7	22	15:45	144	575	186	655			330	1230
04:00	2		5				7		16:00	154		151				305	
04:15	7		7				14		16:15	146		159				305	
04:30	2		2				4		16:30	134		161				295	
04:45	1	12	4	18			5	30	16:45	115	549	163	634			278	1183
05:00	6		7				13		17:00	119		170				289	
05:15	2		8				10		17:15	128		137				265	
05:30	1		6				7		17:30	128		145				273	
05:45	5	14	11	32			16	46	17:45	136	511	123	575			259	1086
06:00	8		9				17		18:00	125		148				273	
06:15	9		15				24		18:15	113		130				243	
06:30	15		15				30		18:30	102		141				243	
06:45	17	49	15	54			32	103	18:45	128	468	139	558			267	1026
07:00	10		25				35		19:00	131		124				255	
07:15	18		32				50		19:15	111		81				192	
07:30	10		39				49		19:30	114		76				190	
07:45	32	70	34	130			66	200	19:45	112	468	72	353			184	821
08:00	18		60				78		20:00	103		88				191	
08:15	26		46				72		20:15	128		61				189	
08:30	19		71				90		20:30	114		57				171	
08:45	36	99	54	231			90	330	20:45	107	452	47	253			154	705
09:00	34		64				98		21:00	92		56				148	
09:15	41		58				99		21:15	77		53				130	
09:30	46		70				116		21:30	74		31				105	
09:45	51	172	103	295			154	467	21:45	47	290	40	180			87	470
10:00	61		101				162		22:00	42		44				86	
10:15	67		117				184		22:15	67		37				104	
10:30	64		125				189		22:30	39		29				68	
10:45	79	271	135	478			214	749	22:45	36	184	25	135			61	319
11:00	90		148				238		23:00	34		26				60	
11:15	110		156				266		23:15	28		14				42	
11:30	123		153				276		23:30	22		24				46	
11:45	115	438	165	622			280	1060	23:45	24	108	13	77			37	185
TOTALS		1259		1951				3210	TOTALS		5289		5489				10778
SPLIT %		39.2%		60.8%				22.9%	SPLIT %		49.1%		50.9%				77.1%

DAILY TOTALS	NB	SB	EB	WB	Total
	6,548	7,440	0	0	13,988

AM Peak Hour	11:45	11:45				11:45	PM Peak Hour	14:30	12:00				12:00
AM Pk Volume	504	758				1262	PM Pk Volume	604	794				1314
Pk Hr Factor	0.875	0.869				0.872	Pk Hr Factor	0.926	0.911				0.907
7 - 9 Volume	169	361	0	0		530	4 - 6 Volume	1060	1209	0	0		2269
7 - 9 Peak Hour	08:00	08:00				08:00	4 - 6 Peak Hour	16:00	16:15				16:00
7 - 9 Pk Volume	99	231	0	0		330	4 - 6 Pk Volume	549	653	0	0		1183
Pk Hr Factor	0.688	0.813	0.000	0.000		0.917	Pk Hr Factor	0.891	0.960	0.000	0.000		0.970

Prepared by NDS/ATD

VOLUME

Imperial Hwy E/O Berry St

Day: Thursday
Date: 4/19/2018

City: Brea
Project #: CA18_1082_011

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	27,735	27,773	55,508

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			58		57		115		12:00			451		375		826	
00:15			51		64		115		12:15			456		400		856	
00:30			29		47		76		12:30			445		427		872	
00:45			40	178	31	199	71	377	12:45			431	1783	447	1649	878	3432
01:00			23		29		52		13:00			386		404		790	
01:15			30		33		63		13:15			409		448		857	
01:30			37		19		56		13:30			419		408		827	
01:45			43	133	31	112	74	245	13:45			351	1565	527	1787	878	3352
02:00			40		20		60		14:00			458		420		878	
02:15			31		23		54		14:15			481		459		940	
02:30			42		52		94		14:30			471		434		905	
02:45			36	149	42	137	78	286	14:45			449	1859	506	1819	955	3678
03:00			34		34		68		15:00			431		486		917	
03:15			38		41		79		15:15			493		489		982	
03:30			55		76		131		15:30			558		470		1028	
03:45			63	190	66	217	129	407	15:45			435	1917	471	1916	906	3833
04:00			78		65		143		16:00			538		498		1036	
04:15			90		77		167		16:15			485		485		970	
04:30			139		109		248		16:30			561		504		1065	
04:45			154	461	142	393	296	854	16:45			526	2110	514	2001	1040	4111
05:00			146		115		261		17:00			533		522		1055	
05:15			161		132		293		17:15			532		494		1026	
05:30			202		198		400		17:30			491		524		1015	
05:45			222	731	263	708	485	1439	17:45			458	2014	473	2013	931	4027
06:00			250		205		455		18:00			443		439		882	
06:15			295		253		548		18:15			455		419		874	
06:30			381		244		625		18:30			376		377		753	
06:45			351	1277	388	1090	739	2367	18:45			356	1630	364	1599	720	3229
07:00			407		378		785		19:00			357		343		700	
07:15			472		414		886		19:15			329		347		676	
07:30			568		489		1057		19:30			305		345		650	
07:45			515	1962	544	1825	1059	3787	19:45			287	1278	300	1335	587	2613
08:00			505		487		992		20:00			275		342		617	
08:15			409		448		857		20:15			222		265		487	
08:30			417		435		852		20:30			231		262		493	
08:45			437	1768	384	1754	821	3522	20:45			203	931	252	1121	455	2052
09:00			387		404		791		21:00			197		291		488	
09:15			335		355		690		21:15			181		297		478	
09:30			359		335		694		21:30			149		213		362	
09:45			313	1394	370	1464	683	2858	21:45			135	662	177	978	312	1640
10:00			346		312		658		22:00			134		188		322	
10:15			362		357		719		22:15			101		135		236	
10:30			367		290		657		22:30			91		142		233	
10:45			416	1491	345	1304	761	2795	22:45			75	401	108	573	183	974
11:00			355		342		697		23:00			89		77		166	
11:15			399		378		777		23:15			67		83		150	
11:30			441		362		803		23:30			57		73		130	
11:45			396	1591	393	1475	789	3066	23:45			47	260	71	304	118	564
TOTALS				11325		10678		22003	TOTALS				16410		17095		33505
SPLIT %				51.5%		48.5%		39.6%	SPLIT %				49.0%		51.0%		60.4%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	27,735	27,773	55,508

AM Peak Hour			07:15	07:30	07:15	PM Peak Hour			16:30	16:45	16:30
AM Pk Volume			2060	1968	3994	PM Pk Volume			2152	2054	4186
Pk Hr Factor			0.907	0.904	0.943	Pk Hr Factor			0.959	0.980	0.983
7 - 9 Volume	0	0	3730	3579	7309	4 - 6 Volume	0	0	4124	4014	8138
7 - 9 Peak Hour			07:15	07:30	07:15	4 - 6 Peak Hour			16:30	16:45	16:30
7 - 9 Pk Volume	0	0	2060	1968	3994	4 - 6 Pk Volume	0	0	2152	2054	4186
Pk Hr Factor	0.000	0.000	0.907	0.904	0.943	Pk Hr Factor	0.000	0.000	0.959	0.980	0.983

Prepared by NDS/ATD

VOLUME

Imperial Hwy E/O S Brea Blvd

Day: Thursday
Date: 4/19/2018

City: Brea
Project #: CA18_1082_012

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	26,531	26,094	52,625

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			79		54		133		12:00			423		342		765	
00:15			64		57		121		12:15			429		383		812	
00:30			42		51		93		12:30			387		401		788	
00:45			37	222	36	198	73	420	12:45			468	1707	390	1516	858	3223
01:00			34		33		67		13:00			364		386		750	
01:15			36		29		65		13:15			422		408		830	
01:30			41		24		65		13:30			414		366		780	
01:45			35	146	30	116	65	262	13:45			374	1574	476	1636	850	3210
02:00			52		18		70		14:00			397		420		817	
02:15			30		34		64		14:15			415		418		833	
02:30			47		49		96		14:30			425		411		836	
02:45			29	158	37	138	66	296	14:45			441	1678	441	1690	882	3368
03:00			34		32		66		15:00			420		422		842	
03:15			33		45		78		15:15			398		452		850	
03:30			51		78		129		15:30			493		411		904	
03:45			58	176	67	222	125	398	15:45			395	1706	445	1730	840	3436
04:00			68		69		137		16:00			458		462		920	
04:15			93		82		175		16:15			431		476		907	
04:30			126		113		239		16:30			467		497		964	
04:45			133	420	137	401	270	821	16:45			501	1857	458	1893	959	3750
05:00			155		108		263		17:00			495		463		958	
05:15			179		128		307		17:15			481		509		990	
05:30			207		188		395		17:30			469		449		918	
05:45			223	764	239	663	462	1427	17:45			415	1860	451	1872	866	3732
06:00			237		192		429		18:00			392		395		787	
06:15			296		229		525		18:15			389		421		810	
06:30			333		262		595		18:30			359		393		752	
06:45			349	1215	341	1024	690	2239	18:45			345	1485	393	1602	738	3087
07:00			373		296		669		19:00			348		337		685	
07:15			424		363		787		19:15			307		361		668	
07:30			458		418		876		19:30			330		309		639	
07:45			394	1649	434	1511	828	3160	19:45			289	1274	339	1346	628	2620
08:00			445		368		813		20:00			312		310		622	
08:15			350		379		729		20:15			268		276		544	
08:30			361		378		739		20:30			259		259		518	
08:45			407	1563	335	1460	742	3023	20:45			236	1075	273	1118	509	2193
09:00			357		352		709		21:00			262		265		527	
09:15			357		367		724		21:15			232		287		519	
09:30			351		310		661		21:30			187		212		399	
09:45			306	1371	357	1386	663	2757	21:45			182	863	213	977	395	1840
10:00			313		302		615		22:00			164		151		315	
10:15			374		342		716		22:15			117		150		267	
10:30			341		329		670		22:30			125		133		258	
10:45			427	1455	348	1321	775	2776	22:45			82	488	105	539	187	1027
11:00			328		310		638		23:00			109		88		197	
11:15			380		371		751		23:15			81		88		169	
11:30			396		367		763		23:30			62		72		134	
11:45			403	1507	370	1418	773	2925	23:45			66	318	69	317	135	635
TOTALS				10646		9858		**20504**	**TOTALS**				15885		16236		**32121**
SPLIT %				51.9%		48.1%		**39.0%**	**SPLIT %**				49.5%		50.5%		**61.0%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	26,531	26,094	52,625

AM Peak Hour			07:15	07:30	**07:15**	**PM Peak Hour**			16:45	16:30	**16:30**
AM Pk Volume			1721	1599	**3304**	**PM Pk Volume**			1946	1927	**3871**
Pk Hr Factor			0.939	0.921	**0.943**	**Pk Hr Factor**			0.971	0.946	**0.978**
7 - 9 Volume	0	0	3212	2971	**6183**	**4 - 6 Volume**	0	0	3717	3765	**7482**
7 - 9 Peak Hour			07:15	07:30	**07:15**	**4 - 6 Peak Hour**			16:45	16:30	**16:30**
7 - 9 Pk Volume	0	0	1721	1599	**3304**	**4 - 6 Pk Volume**	0	0	1946	1927	**3871**
Pk Hr Factor	0.000	0.000	0.939	0.921	**0.943**	**Pk Hr Factor**	0.000	0.000	0.971	0.946	**0.978**

Prepared by NDS/ATD

VOLUME

Imperial Hwy E/O State College Blvd

Day: Thursday
Date: 4/19/2018

City: Brea
Project #: CA18_1082_013

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	33,879	37,392	71,271

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00					51		60		111		12:00					498		559		1057	
00:15					51		59		110		12:15					497		622		1119	
00:30					47		41		88		12:30					551		639		1190	
00:45					44	193	38	198	82	391	12:45					519	2065	618	2438	1137	4503
01:00					37		34		71		13:00					550		572		1122	
01:15					30		33		63		13:15					480		606		1086	
01:30					27		45		72		13:30					510		610		1120	
01:45					29	123	40	152	69	275	13:45					536	2076	547	2335	1083	4411
02:00					24		36		60		14:00					500		521		1021	
02:15					35		33		68		14:15					506		542		1048	
02:30					54		49		103		14:30					527		605		1132	
02:45					38	151	78	196	116	347	14:45					538	2071	597	2265	1135	4336
03:00					33		39		72		15:00					539		636		1175	
03:15					56		62		118		15:15					541		550		1091	
03:30					78		84		162		15:30					547		563		1110	
03:45					61	228	97	282	158	510	15:45					588	2215	645	2394	1233	4609
04:00					79		93		172		16:00					627		649		1276	
04:15					97		148		245		16:15					641		719		1360	
04:30					138		113		251		16:30					646		691		1337	
04:45					147	461	209	563	356	1024	16:45					632	2546	646	2705	1278	5251
05:00					139		153		292		17:00					617		688		1305	
05:15					157		202		359		17:15					653		684		1337	
05:30					214		225		439		17:30					633		683		1316	
05:45					302	812	305	885	607	1697	17:45					625	2528	724	2779	1349	5307
06:00					208		235		443		18:00					548		715		1263	
06:15					263		276		539		18:15					586		640		1226	
06:30					317		344		661		18:30					525		597		1122	
06:45					446	1234	441	1296	887	2530	18:45					533	2192	591	2543	1124	4735
07:00					372		402		774		19:00					513		563		1076	
07:15					474		528		1002		19:15					497		484		981	
07:30					530		512		1042		19:30					452		497		949	
07:45					518	1894	545	1987	1063	3881	19:45					420	1882	490	2034	910	3916
08:00					460		477		937		20:00					406		432		838	
08:15					496		501		997		20:15					361		433		794	
08:30					465		505		970		20:30					316		419		735	
08:45					464	1885	528	2011	992	3896	20:45					297	1380	352	1636	649	3016
09:00					446		417		863		21:00					326		348		674	
09:15					495		528		1023		21:15					272		253		525	
09:30					462		488		950		21:30					239		235		474	
09:45					538	1941	571	2004	1109	3945	21:45					212	1049	241	1077	453	2126
10:00					449		553		1002		22:00					168		215		383	
10:15					480		559		1039		22:15					190		182		372	
10:30					440		524		964		22:30					165		173		338	
10:45					473	1842	591	2227	1064	4069	22:45					123	646	132	702	255	1348
11:00					493		531		1024		23:00					93		98		191	
11:15					529		545		1074		23:15					71		138		209	
11:30					565		607		1172		23:30					76		101		177	
11:45					556	2143	572	2255	1128	4398	23:45					82	322	91	428	173	750
TOTALS						12907		14056		26963	TOTALS						20972		23336		44308
SPLIT %						47.9%		52.1%		37.8%	SPLIT %						47.3%		52.7%		62.2%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	33,879	37,392	71,271

AM Peak Hour			11:15	11:45	11:45	PM Peak Hour			16:30	17:15	17:00
AM Pk Volume			2148	2392	4494	PM Pk Volume			2548	2806	5307
Pk Hr Factor			0.950	0.936	0.944	Pk Hr Factor			0.975	0.969	0.984
7 - 9 Volume	0	0	3779	3998	7777	4 - 6 Volume	0	0	5074	5484	10558
7 - 9 Peak Hour			07:30	07:15	07:15	4 - 6 Peak Hour			16:30	17:00	17:00
7 - 9 Pk Volume	0	0	2004	2062	4044	4 - 6 Pk Volume	0	0	2548	2779	5307
Pk Hr Factor	0.000	0.000	0.945	0.946	0.951	Pk Hr Factor	0.000	0.000	0.975	0.960	0.984

Prepared by NDS/ATD

VOLUME

Imperial Hwy E/O SR-57 NB Ramps

Day: Tuesday
Date: 11/13/2018

City: Brea
Project #: CA18_1233_013

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	26,754	26,304	53,058

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
0:00			44		32		76		12:00			363		466		829	
0:15			36		32		68		12:15			394		437		831	
0:30			34		23		57		12:30			365		461		826	
0:45			16	130	11	98	27	228	12:45			394	1516	454	1818	848	3334
1:00			22		27		49		13:00			390		438		828	
1:15			17		9		26		13:15			428		431		859	
1:30			19		29		48		13:30			409		449		858	
1:45			19	77	18	83	37	160	13:45			429	1656	404	1722	833	3378
2:00			14		17		31		14:00			412		426		838	
2:15			14		16		30		14:15			378		441		819	
2:30			18		12		30		14:30			393		456		849	
2:45			26	72	14	59	40	131	14:45			396	1579	414	1737	810	3316
3:00			14		21		35		15:00			398		484		882	
3:15			10		21		31		15:15			465		450		915	
3:30			25		43		68		15:30			491		480		971	
3:45			35	84	38	123	73	207	15:45			473	1827	517	1931	990	3758
4:00			32		47		79		16:00			469		473		942	
4:15			38		50		88		16:15			499		486		985	
4:30			107		89		196		16:30			473		497		970	
4:45			153	330	87	273	240	603	16:45			496	1937	483	1939	979	3876
5:00			88		98		186		17:00			469		451		920	
5:15			133		117		250		17:15			530		525		1055	
5:30			177		188		365		17:30			514		496		1010	
5:45			235	633	179	582	414	1215	17:45			537	2050	476	1948	1013	3998
6:00			249		228		477		18:00			464		436		900	
6:15			260		233		493		18:15			477		418		895	
6:30			404		255		659		18:30			418		378		796	
6:45			417	1330	310	1026	727	2356	18:45			389	1748	347	1579	736	3327
7:00			441		336		777		19:00			380		340		720	
7:15			446		374		820		19:15			358		346		704	
7:30			446		418		864		19:30			292		310		602	
7:45			531	1864	447	1575	978	3439	19:45			268	1298	276	1272	544	2570
8:00			477		455		932		20:00			253		301		554	
8:15			483		413		896		20:15			254		247		501	
8:30			518		354		872		20:30			242		245		487	
8:45			462	1940	342	1564	804	3504	20:45			205	954	247	1040	452	1994
9:00			413		297		710		21:00			180		230		410	
9:15			359		295		654		21:15			176		222		398	
9:30			369		290		659		21:30			141		164		305	
9:45			374	1515	376	1258	750	2773	21:45			137	634	163	779	300	1413
10:00			362		349		711		22:00			142		145		287	
10:15			412		339		751		22:15			127		98		225	
10:30			352		408		760		22:30			106		94		200	
10:45			355	1481	416	1512	771	2993	22:45			78	453	96	433	174	886
11:00			366		389		755		23:00			52		61		113	
11:15			363		441		804		23:15			57		61		118	
11:30			349		453		802		23:30			41		57		98	
11:45			382	1460	455	1738	837	3198	23:45			36	186	36	215	72	401
TOTALS				10916		9891		**20807**	**TOTALS**				15838		16413		**32251**
SPLIT %				52.5%		47.5%		**39.2%**	**SPLIT %**				49.1%		50.9%		**60.8%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	26,754	26,304	53,058

AM Peak Hour			7:45	11:45	**7:45**	**PM Peak Hour**			17:00	15:45	**17:00**
AM Pk Volume			2009	1819	**3678**	**PM Pk Volume**			2050	1973	**3998**
Pk Hr Factor			0.946	0.976	**0.940**	**Pk Hr Factor**			0.954	0.954	**0.947**
7 - 9 Volume	0	0	3804	3139	**6943**	**4 - 6 Volume**	0	0	3987	3887	**7874**
7 - 9 Peak Hour			7:45	7:30	**7:45**	**4 - 6 Peak Hour**			17:00	16:30	**17:00**
7 - 9 Pk Volume	0	0	2009	1733	**3678**	**4 - 6 Pk Volume**	0	0	2050	1956	**3998**
Pk Hr Factor	0.000	0.000	0.946	0.952	**0.940**	**Pk Hr Factor**	0.000	0.000	0.954	0.931	**0.947**

Prepared by NDS/ATD

VOLUME

Imperial Hwy E/O Associated Rd

Day: Tuesday
Date: 11/13/2018

City: Brea
Project #: CA18_1233_014

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	26,549	24,435	50,984

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
0:00			31		23		54		12:00			390		434		824	
0:15			26		22		48		12:15			434		435		869	
0:30			28		19		47		12:30			414		427		841	
0:45			13	98	11	75	24	173	12:45			464	1702	436	1732	900	3434
1:00			18		22		40		13:00			428		413		841	
1:15			13		6		19		13:15			452		417		869	
1:30			17		20		37		13:30			417		445		862	
1:45			16	64	12	60	28	124	13:45			468	1765	388	1663	856	3428
2:00			14		15		29		14:00			431		400		831	
2:15			11		13		24		14:15			395		424		819	
2:30			16		10		26		14:30			408		438		846	
2:45			22	63	10	48	32	111	14:45			394	1628	384	1646	778	3274
3:00			11		12		23		15:00			412		451		863	
3:15			7		17		24		15:15			478		425		903	
3:30			23		28		51		15:30			480		472		952	
3:45			35	76	28	85	63	161	15:45			479	1849	472	1820	951	3669
4:00			31		38		69		16:00			472		454		926	
4:15			31		39		70		16:15			488		449		937	
4:30			89		68		157		16:30			478		488		966	
4:45			141	292	64	209	205	501	16:45			502	1940	454	1845	956	3785
5:00			87		65		152		17:00			477		420		897	
5:15			128		86		214		17:15			511		500		1011	
5:30			164		143		307		17:30			506		496		1002	
5:45			217	596	148	442	365	1038	17:45			517	2011	456	1872	973	3883
6:00			238		187		425		18:00			462		425		887	
6:15			245		183		428		18:15			468		422		890	
6:30			372		235		607		18:30			410		366		776	
6:45			402	1257	271	876	673	2133	18:45			352	1692	333	1546	685	3238
7:00			422		303		725		19:00			357		325		682	
7:15			420		330		750		19:15			342		332		674	
7:30			423		384		807		19:30			285		291		576	
7:45			514	1779	422	1439	936	3218	19:45			267	1251	250	1198	517	2449
8:00			484		422		906		20:00			238		293		531	
8:15			488		396		884		20:15			236		216		452	
8:30			528		321		849		20:30			238		216		454	
8:45			494	1994	322	1461	816	3455	20:45			183	895	219	944	402	1839
9:00			425		275		700		21:00			146		209		355	
9:15			351		294		645		21:15			161		191		352	
9:30			356		267		623		21:30			125		139		264	
9:45			346	1478	365	1201	711	2679	21:45			112	544	139	678	251	1222
10:00			367		351		718		22:00			133		116		249	
10:15			412		320		732		22:15			105		83		188	
10:30			373		375		748		22:30			80		82		162	
10:45			360	1512	418	1464	778	2976	22:45			64	382	78	359	142	741
11:00			387		360		747		23:00			36		48		84	
11:15			368		418		786		23:15			50		38		88	
11:30			365		423		788		23:30			32		35		67	
11:45			409	1529	428	1629	837	3158	23:45			34	152	22	143	56	295
TOTALS				10738		8989		**19727**	**TOTALS**				15811		15446		**31257**
SPLIT %				54.4%		45.6%		**38.7%**	**SPLIT %**				50.6%		49.4%		**61.3%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	26,549	24,435	50,984

AM Peak Hour			7:45	11:45	**7:45**	**PM Peak Hour**			17:00	17:15	**17:00**
AM Pk Volume			2014	1724	**3575**	**PM Pk Volume**			2011	1877	**3883**
Pk Hr Factor			0.954	0.991	**0.955**	**Pk Hr Factor**			0.972	0.939	**0.960**
7 - 9 Volume	0	0	3773	2900	**6673**	**4 - 6 Volume**	0	0	3951	3717	**7668**
7 - 9 Peak Hour			7:45	7:30	**7:45**	**4 - 6 Peak Hour**			17:00	17:00	**17:00**
7 - 9 Pk Volume	0	0	2014	1624	**3575**	**4 - 6 Pk Volume**	0	0	2011	1872	**3883**
Pk Hr Factor	0.000	0.000	0.954	0.962	**0.955**	**Pk Hr Factor**	0.000	0.000	0.972	0.936	**0.960**

Prepared by NDS/ATD

VOLUME

Imperial Hwy E/O Castlegate Ln/Placentia Ave

Day: Tuesday
Date: 11/13/2018

City: Brea
Project #: CA18_1233_015

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	26,188	24,966	51,154

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
0:00			27		20		47		12:00			398		437		835	
0:15			18		18		36		12:15			448		429		877	
0:30			24		15		39		12:30			419		457		876	
0:45			11	80	8	61	19	141	12:45			495	1760	415	1738	910	3498
1:00			11		19		30		13:00			450		421		871	
1:15			16		3		19		13:15			464		428		892	
1:30			13		18		31		13:30			434		464		898	
1:45			17	57	13	53	30	110	13:45			456	1804	412	1725	868	3529
2:00			15		14		29		14:00			444		439		883	
2:15			10		6		16		14:15			415		430		845	
2:30			15		7		22		14:30			426		456		882	
2:45			20	60	9	36	29	96	14:45			419	1704	399	1724	818	3428
3:00			10		12		22		15:00			447		434		881	
3:15			7		14		21		15:15			485		448		933	
3:30			21		30		51		15:30			491		478		969	
3:45			31	69	25	81	56	150	15:45			500	1923	468	1828	968	3751
4:00			33		36		69		16:00			454		479		933	
4:15			31		40		71		16:15			482		481		963	
4:30			80		63		143		16:30			469		502		971	
4:45			129	273	57	196	186	469	16:45			488	1893	462	1924	950	3817
5:00			78		62		140		17:00			472		491		963	
5:15			114		72		186		17:15			511		523		1034	
5:30			175		136		311		17:30			481		468		949	
5:45			248	615	131	401	379	1016	17:45			494	1958	466	1948	960	3906
6:00			231		191		422		18:00			431		445		876	
6:15			227		164		391		18:15			438		452		890	
6:30			331		236		567		18:30			450		422		872	
6:45			403	1192	295	886	698	2078	18:45			334	1653	331	1650	665	3303
7:00			388		315		703		19:00			342		341		683	
7:15			391		327		718		19:15			324		338		662	
7:30			406		347		753		19:30			266		304		570	
7:45			467	1652	428	1417	895	3069	19:45			258	1190	260	1243	518	2433
8:00			444		399		843		20:00			236		307		543	
8:15			426		373		799		20:15			213		251		464	
8:30			491		329		820		20:30			213		221		434	
8:45			465	1826	332	1433	797	3259	20:45			162	824	227	1006	389	1830
9:00			411		325		736		21:00			121		228		349	
9:15			364		312		676		21:15			143		197		340	
9:30			393		271		664		21:30			107		151		258	
9:45			376	1544	368	1276	744	2820	21:45			106	477	141	717	247	1194
10:00			381		355		736		22:00			103		106		209	
10:15			418		315		733		22:15			85		91		176	
10:30			380		381		761		22:30			68		80		148	
10:45			376	1555	413	1464	789	3019	22:45			49	305	73	350	122	655
11:00			384		378		762		23:00			35		52		87	
11:15			411		411		822		23:15			48		40		88	
11:30			393		432		825		23:30			32		34		66	
11:45			440	1628	439	1660	879	3288	23:45			31	146	23	149	54	295
TOTALS				10551		8964		**19515**	**TOTALS**				15637		16002		**31639**
SPLIT %				54.1%		45.9%		**38.1%**	**SPLIT %**				49.4%		50.6%		**61.9%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	26,188	24,966	51,154

AM Peak Hour			7:45	11:45	**11:45**	**PM Peak Hour**			17:00	16:30	**16:30**
AM Pk Volume			1828	1762	**3467**	**PM Pk Volume**			1958	1978	**3918**
Pk Hr Factor			0.931	0.964	**0.986**	**Pk Hr Factor**			0.958	0.946	**0.947**
7 - 9 Volume	0	0	3478	2850	**6328**	**4 - 6 Volume**	0	0	3851	3872	**7723**
7 - 9 Peak Hour			7:45	7:30	**7:45**	**4 - 6 Peak Hour**			17:00	16:30	**16:30**
7 - 9 Pk Volume	0	0	1828	1547	**3357**	**4 - 6 Pk Volume**	0	0	1958	1978	**3918**
Pk Hr Factor	0.000	0.000	0.931	0.904	**0.938**	**Pk Hr Factor**	0.000	0.000	0.958	0.946	**0.947**

APPENDIX C

INTERSECTION LEVEL OF SERVICE CALCULATION WORKSHEETS – ICU

APPENDIX C-I

EXISTING TRAFFIC CONDITIONS

Brea Mall Expansion, Brea

Vistro File: N:\...\4099 ICU Network.vistro
Report File: N:\...\AM Ex.pdf

Scenario 1 AM Existing
4/12/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State College Boulevard at Lambert Road	Signalized	ICU 1	WB Thru	0.703	-	C
2	SR-57 SB Ramps at Lambert Road	Signalized	ICU 1	WB Thru	0.749	-	C
3	SR-57 NB Ramps at Lambert Road	Signalized	ICU 1	EB Thru	0.820	-	D
4	Randolph Avenue at Birch Street	Signalized	ICU 1	EB Thru	0.352	-	A
5	State College Boulevard at Birch Street	Signalized	ICU 1	SB Thru	0.529	-	A
6	S Associated Road at Birch Street	Signalized	ICU 1	EB Thru	0.619	-	B
7	Randolph Avenue at Madison Way	Signalized	ICU 1	NB Thru	0.139	-	A
8	Randolph Avenue at Brea Mall	Signalized	ICU 1	NB Thru	0.136	-	A
9	Brea Mall South at State College Boulevard	Signalized	ICU 1	WB Thru	0.183	-	A
10	Harbor Boulevard at Imperial Highway	Signalized	ICU 1	EB Right	0.790	-	C
11	Puente Street at Imperial Highway	Signalized	ICU 1	EB Thru	0.573	-	A
12	Brea Boulevard at Imperial Highway	Signalized	ICU 1	EB Thru	0.787	-	C
13	Randolph Avenue at Imperial Highway	Signalized	ICU 1	EB Thru	0.420	-	A
14	State College Boulevard at Imperial Highway	Signalized	ICU 1	WB Thru	0.701	-	C
15	SR-57 SB Ramps at Imperial Highway	Signalized	ICU 1	WB Thru	0.575	-	A
16	SR-57 NB Ramps at Imperial Highway	Signalized	ICU 1	EB Thru	0.570	-	A
17	Associated Road at Imperial Highway	Signalized	ICU 1	EB Thru	0.704	-	C
18	Castlegate Lane/Placentia	Signalized	ICU 1	EB Thru	0.601		B

16	Avenue at Imperial Highway	Signalized	ICU 1	EB Thru	0.001	-	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: State College Boulevard at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.703

Intersection Setup

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	151	192	133	865	582	8	14	1220	196	431	1519	534
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	151	192	133	865	582	8	14	1220	196	431	1519	534
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	38	48	33	216	146	2	4	305	49	108	380	134
Total Analysis Volume [veh/h]	151	192	133	865	582	8	14	1220	196	431	1519	534
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.06	0.06	0.25	0.17	0.17	0.00	0.21	0.21	0.13	0.30	0.06
Intersection LOS	C											
Intersection V/C	0.703											

Intersection Level Of Service Report
Intersection 2: SR-57 SB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.749

Intersection Setup

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	0	0	0	1026	0	513	0	1659	565	217	2027	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	1026	0	513	0	1659	565	217	2027	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	257	0	128	0	415	141	54	507	0
Total Analysis Volume [veh/h]	0	0	0	1026	0	513	0	1659	565	217	2027	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	7	0	0	0	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.30	0.00	0.30	0.00	0.33	0.33	0.06	0.40	0.00
Intersection LOS	C											
Intersection V/C	0.749											

Intersection Level Of Service Report
Intersection 3: SR-57 NB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.820

Intersection Setup

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	1019	0	482	0	0	0	275	2399	0	0	1237	475
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1019	0	482	0	0	0	275	2399	0	0	1237	475
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	255	0	121	0	0	0	69	600	0	0	309	119
Total Analysis Volume [veh/h]	1019	0	482	0	0	0	275	2399	0	0	1237	475
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	0	0	0	0	0	5	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.30	0.00	0.28	0.00	0.00	0.00	0.08	0.47	0.00	0.00	0.25	0.25
Intersection LOS	D											
Intersection V/C	0.820											

Intersection Level Of Service Report
Intersection 4: Randolph Avenue at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.352

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Base Volume Input [veh/h]	23	40	85	37	35	25	39	554	89	70	468	43
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	40	85	37	35	25	39	554	89	70	468	43
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	10	21	9	9	6	10	139	22	18	117	11
Total Analysis Volume [veh/h]	23	40	85	37	35	25	39	554	89	70	468	43
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.02	0.05	0.02	0.04	0.04	0.02	0.19	0.19	0.04	0.14	0.03
Intersection LOS	A											
Intersection V/C	0.352											

Intersection Level Of Service Report
Intersection 5: State College Boulevard at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.529

Intersection Setup

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Base Volume Input [veh/h]	76	120	96	628	779	145	75	502	47	78	555	273
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	76	120	96	628	779	145	75	502	47	78	555	273
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	30	24	157	195	36	19	126	12	20	139	68
Total Analysis Volume [veh/h]	76	120	96	628	779	145	75	502	47	78	555	273
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.04	0.06	0.18	0.27	0.27	0.02	0.15	0.03	0.02	0.16	0.16
Intersection LOS	A											
Intersection V/C	0.529											

Intersection Level Of Service Report
Intersection 6: S Associated Road at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.619

Intersection Setup

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Base Volume Input [veh/h]	234	6	307	55	28	8	2	909	302	341	747	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	234	6	307	55	28	8	2	909	302	341	747	11
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	59	2	77	14	7	2	1	227	76	85	187	3
Total Analysis Volume [veh/h]	234	6	307	55	28	8	2	909	302	341	747	11
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	8	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups			1,8									
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.00	0.08	0.03	0.02	0.02	0.00	0.36	0.36	0.10	0.22	0.22
Intersection LOS	B											
Intersection V/C	0.619											

Intersection Level Of Service Report
Intersection 7: Randolph Avenue at Madison Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.139

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Base Volume Input [veh/h]	25	130	8	6	119	14	32	2	57	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	25	130	8	6	119	14	32	2	57	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	33	2	2	30	4	8	1	14	0	0	0
Total Analysis Volume [veh/h]	25	130	8	6	119	14	32	2	57	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.04	0.04	0.00	0.04	0.04	0.02	0.03	0.03	0.00	0.00	0.00
Intersection LOS	A											
Intersection V/C	0.139											

Intersection Level Of Service Report
Intersection 8: Randolph Avenue at Brea Mall

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.136

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Base Volume Input [veh/h]	13	163	66	15	141	6	1	0	1	26	0	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	13	163	66	15	141	6	1	0	1	26	0	5
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	41	17	4	35	2	0	0	0	7	0	1
Total Analysis Volume [veh/h]	13	163	66	15	141	6	1	0	1	26	0	5
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.07	0.07	0.01	0.04	0.04	0.00	0.00	0.00	0.01	0.00	0.01
Intersection LOS	A											
Intersection V/C	0.136											

Intersection Level Of Service Report
Intersection 9: Brea Mall South at State College Boulevard

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.183

Intersection Setup

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Base Volume Input [veh/h]	32	5	15	3	2	27	77	238	15	27	319	12
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	32	5	15	3	2	27	77	238	15	27	319	12
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	1	4	1	1	7	19	60	4	7	80	3
Total Analysis Volume [veh/h]	32	5	15	3	2	27	77	238	15	27	319	12
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	4	5	2	0	1	6	0
Auxiliary Signal Groups						4,5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.01	0.00	0.00	0.00	0.02	0.07	0.07	0.02	0.10	0.10
Intersection LOS	A											
Intersection V/C	0.183											

Intersection Level Of Service Report
Intersection 10: Harbor Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.790

Intersection Setup

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	302	601	259	143	1241	279	183	1296	361	282	1143	99
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	302	601	259	143	1241	279	183	1296	361	282	1143	99
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	76	150	65	36	310	70	46	324	90	71	286	25
Total Analysis Volume [veh/h]	302	601	259	143	1241	279	183	1296	361	282	1143	99
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.12	0.15	0.04	0.24	0.16	0.05	0.32	0.32	0.08	0.22	0.06
Intersection LOS	C											
Intersection V/C	0.790											

Intersection Level Of Service Report
Intersection 11: Puente Street at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.573

Intersection Setup

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	59	113	152	120	84	133	218	1314	78	48	1195	156
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	59	113	152	120	84	133	218	1314	78	48	1195	156
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	28	38	30	21	33	55	329	20	12	299	39
Total Analysis Volume [veh/h]	59	113	152	120	84	133	218	1314	78	48	1195	156
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

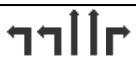
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.07	0.09	0.07	0.02	0.08	0.13	0.27	0.27	0.03	0.23	0.09
Intersection LOS	A											
Intersection V/C	0.573											

Intersection Level Of Service Report
Intersection 12: Brea Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.787

Intersection Setup

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	426	452	142	126	944	163	130	1478	345	150	1409	63
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	426	452	142	126	944	163	130	1478	345	150	1409	63
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	107	113	36	32	236	41	33	370	86	38	352	16
Total Analysis Volume [veh/h]	426	452	142	126	944	163	130	1478	345	150	1409	63
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.09	0.08	0.04	0.28	0.10	0.04	0.29	0.20	0.04	0.28	0.04
Intersection LOS	C											
Intersection V/C	0.787											

Intersection Level Of Service Report
Intersection 13: Randolph Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.420

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	15	14	53	125	14	29	58	1516	9	24	1466	143
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	14	53	125	14	29	58	1516	9	24	1466	143
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	4	13	31	4	7	15	379	2	6	367	36
Total Analysis Volume [veh/h]	15	14	53	125	14	29	58	1516	9	24	1466	143
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

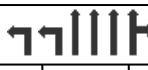
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.02	0.02	0.04	0.03	0.03	0.02	0.30	0.30	0.01	0.29	0.08
Intersection LOS	A											
Intersection V/C	0.420											

Intersection Level Of Service Report
Intersection 14: State College Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.701

Intersection Setup

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	97	137	397	84	341	26	33	1518	171	431	1517	134
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	97	137	397	84	341	26	33	1518	171	431	1517	134
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	34	99	21	85	7	8	380	43	108	379	34
Total Analysis Volume [veh/h]	97	137	397	84	341	26	33	1518	171	431	1517	134
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.04	0.23	0.04	0.11	0.11	0.01	0.25	0.25	0.13	0.30	0.04
Intersection LOS	C											
Intersection V/C	0.701											

Intersection Level Of Service Report
Intersection 15: SR-57 SB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.575

Intersection Setup

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	0	0	0	574	0	460	0	1410	639	0	1645	180
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	574	0	460	0	1410	639	0	1645	180
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	144	0	115	0	353	160	0	411	45
Total Analysis Volume [veh/h]	0	0	0	574	0	460	0	1410	639	0	1645	180
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	7	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

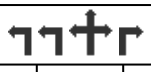
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.17	0.00	0.20	0.00	0.28	0.00	0.00	0.32	0.00
Intersection LOS	A											
Intersection V/C	0.575											

Intersection Level Of Service Report
Intersection 16: SR-57 NB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.570

Intersection Setup

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	831	43	783	0	0	50	116	1281	531	0	1400	18
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	831	43	783	0	0	50	116	1281	531	0	1400	18
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	208	11	196	0	0	13	29	320	133	0	350	5
Total Analysis Volume [veh/h]	831	43	783	0	0	50	116	1281	531	0	1400	18
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Overlap	Protecte	Permiss	Unsigna	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	0	5	5	2	0	0	6	0
Auxiliary Signal Groups						5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.16	0.24	0.24	0.00	0.00	0.00	0.07	0.25	0.00	0.00	0.21	0.21
Intersection LOS	A											
Intersection V/C	0.570											

Intersection Level Of Service Report
Intersection 17: Associated Road at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.704

Intersection Setup

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	144	202	69	145	320	143	145	1794	97	89	1538	82
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	144	202	69	145	320	143	145	1794	97	89	1538	82
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	51	17	36	80	36	36	449	24	22	385	21
Total Analysis Volume [veh/h]	144	202	69	145	320	143	145	1794	97	89	1538	82
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.08	0.08	0.04	0.19	0.08	0.09	0.37	0.37	0.05	0.24	0.24
Intersection LOS	C											
Intersection V/C	0.704											

Intersection Level Of Service Report
Intersection 18: Castlegate Lane/Placentia Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.601

Intersection Setup

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	168	12	141	24	27	14	13	1756	347	170	1406	32
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	168	12	141	24	27	14	13	1756	347	170	1406	32
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	42	3	35	6	7	4	3	439	87	43	352	8
Total Analysis Volume [veh/h]	168	12	141	24	27	14	13	1756	347	170	1406	32
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.05	0.08	0.01	0.02	0.02	0.01	0.34	0.20	0.10	0.28	0.28
Intersection LOS	B											
Intersection V/C	0.601											

Brea Mall Expansion, Brea

Vistro File: N:\...\4099 ICU Network.vistro
Report File: N:\...\PM Ex.pdf

Scenario 2 PM Existing
4/12/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State College Boulevard at Lambert Road	Signalized	ICU 1	WB Right	0.676	-	B
2	SR-57 SB Ramps at Lambert Road	Signalized	ICU 1	WB Thru	0.614	-	B
3	SR-57 NB Ramps at Lambert Road	Signalized	ICU 1	EB Thru	0.568	-	A
4	Randolph Avenue at Birch Street	Signalized	ICU 1	WB Thru	0.566	-	A
5	State College Boulevard at Birch Street	Signalized	ICU 1	WB Right	0.673	-	B
6	S Associated Road at Birch Street	Signalized	ICU 1	WB Thru	0.619	-	B
7	Randolph Avenue at Madison Way	Signalized	ICU 1	NB Thru	0.243	-	A
8	Randolph Avenue at Brea Mall	Signalized	ICU 1	NB Thru	0.358	-	A
9	Brea Mall South at State College Boulevard	Signalized	ICU 1	EB Thru	0.442	-	A
10	Harbor Boulevard at Imperial Highway	Signalized	ICU 1	WB Thru	0.770	-	C
11	Puente Street at Imperial Highway	Signalized	ICU 1	WB Thru	0.589	-	A
12	Brea Boulevard at Imperial Highway	Signalized	ICU 1	WB Thru	0.773	-	C
13	Randolph Avenue at Imperial Highway	Signalized	ICU 1	WB Thru	0.647	-	B
14	State College Boulevard at Imperial Highway	Signalized	ICU 1	WB Thru	0.862	-	D
15	SR-57 SB Ramps at Imperial Highway	Signalized	ICU 1	WB Thru	0.705	-	C
16	SR-57 NB Ramps at Imperial Highway	Signalized	ICU 1	EB Thru	0.712	-	C
17	Associated Road at Imperial Highway	Signalized	ICU 1	EB Right	0.780	-	C
18	Castlegate Lane/Placentia	Signalized	ICU 1	WB Thru	0.699		B

16	Avenue at Imperial Highway	Signalized	ICU 1	WB Thru	0.699	-	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: State College Boulevard at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.676

Intersection Setup

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	302	576	253	545	372	15	38	1140	245	316	1008	686
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	302	576	253	545	372	15	38	1140	245	316	1008	686
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	76	144	63	136	93	4	10	285	61	79	252	172
Total Analysis Volume [veh/h]	302	576	253	545	372	15	38	1140	245	316	1008	686
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.17	0.15	0.16	0.11	0.11	0.01	0.20	0.20	0.09	0.20	0.24
Intersection LOS	B											
Intersection V/C	0.676											

Intersection Level Of Service Report
Intersection 2: SR-57 SB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.614

Intersection Setup

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	0	0	0	443	0	697	0	1115	746	226	1610	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	443	0	697	0	1115	746	226	1610	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	111	0	174	0	279	187	57	403	0
Total Analysis Volume [veh/h]	0	0	0	443	0	697	0	1115	746	226	1610	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	7	0	0	0	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.13	0.00	0.22	0.00	0.27	0.27	0.07	0.32	0.00
Intersection LOS	B											
Intersection V/C	0.614											

Intersection Level Of Service Report
Intersection 3: SR-57 NB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.568

Intersection Setup

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	636	0	260	0	0	0	356	1407	0	0	1024	511
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	636	0	260	0	0	0	356	1407	0	0	1024	511
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	159	0	65	0	0	0	89	352	0	0	256	128
Total Analysis Volume [veh/h]	636	0	260	0	0	0	356	1407	0	0	1024	511
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	0	0	0	0	0	5	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.19	0.00	0.15	0.00	0.00	0.00	0.10	0.28	0.00	0.00	0.23	0.23
Intersection LOS	A											
Intersection V/C	0.568											

Intersection Level Of Service Report
Intersection 4: Randolph Avenue at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.566

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Base Volume Input [veh/h]	129	56	162	50	48	106	77	608	93	183	1034	38
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	129	56	162	50	48	106	77	608	93	183	1034	38
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	32	14	41	13	12	27	19	152	23	46	259	10
Total Analysis Volume [veh/h]	129	56	162	50	48	106	77	608	93	183	1034	38
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.03	0.10	0.03	0.09	0.09	0.05	0.21	0.21	0.11	0.30	0.02
Intersection LOS	A											
Intersection V/C	0.566											

Intersection Level Of Service Report
Intersection 5: State College Boulevard at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.673

Intersection Setup

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Base Volume Input [veh/h]	139	353	156	310	324	257	194	741	154	141	949	602
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	139	353	156	310	324	257	194	741	154	141	949	602
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	35	88	39	78	81	64	49	185	39	35	237	151
Total Analysis Volume [veh/h]	139	353	156	310	324	257	194	741	154	141	949	602
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.10	0.09	0.09	0.17	0.17	0.06	0.22	0.09	0.04	0.28	0.35
Intersection LOS	B											
Intersection V/C	0.673											

Intersection Level Of Service Report
Intersection 6: S Associated Road at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.619

Intersection Setup

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Base Volume Input [veh/h]	460	32	342	11	19	6	13	855	287	284	1213	17
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	460	32	342	11	19	6	13	855	287	284	1213	17
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	115	8	86	3	5	2	3	214	72	71	303	4
Total Analysis Volume [veh/h]	460	32	342	11	19	6	13	855	287	284	1213	17
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	8	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups			1,8									
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.14	0.02	0.12	0.01	0.01	0.01	0.01	0.34	0.34	0.08	0.36	0.36
Intersection LOS	B											
Intersection V/C	0.619											

Intersection Level Of Service Report
Intersection 7: Randolph Avenue at Madison Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.243

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Base Volume Input [veh/h]	46	308	41	27	245	27	60	4	50	72	4	37
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	46	308	41	27	245	27	60	4	50	72	4	37
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	77	10	7	61	7	15	1	13	18	1	9
Total Analysis Volume [veh/h]	46	308	41	27	245	27	60	4	50	72	4	37
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.10	0.10	0.02	0.08	0.08	0.04	0.03	0.03	0.04	0.02	0.02
Intersection LOS	A											
Intersection V/C	0.243											

Intersection Level Of Service Report
Intersection 8: Randolph Avenue at Brea Mall

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.358

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Base Volume Input [veh/h]	16	314	310	36	345	19	17	3	12	263	3	45
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	314	310	36	345	19	17	3	12	263	3	45
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	79	78	9	86	5	4	1	3	66	1	11
Total Analysis Volume [veh/h]	16	314	310	36	345	19	17	3	12	263	3	45
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.18	0.18	0.02	0.11	0.11	0.01	0.01	0.01	0.08	0.12	0.12
Intersection LOS	A											
Intersection V/C	0.358											

Intersection Level Of Service Report
Intersection 9: Brea Mall South at State College Boulevard

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.442

Intersection Setup

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Base Volume Input [veh/h]	138	19	64	43	13	368	475	494	22	95	414	26
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	138	19	64	43	13	368	475	494	22	95	414	26
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	35	5	16	11	3	92	119	124	6	24	104	7
Total Analysis Volume [veh/h]	138	19	64	43	13	368	475	494	22	95	414	26
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	4	5	2	0	1	6	0
Auxiliary Signal Groups						4,5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.05	0.04	0.03	0.01	0.08	0.14	0.15	0.15	0.06	0.13	0.13
Intersection LOS	A											
Intersection V/C	0.442											

Intersection Level Of Service Report
Intersection 10: Harbor Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.770

Intersection Setup

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	426	1091	211	196	852	306	268	1189	287	425	1498	219
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	426	1091	211	196	852	306	268	1189	287	425	1498	219
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	107	273	53	49	213	77	67	297	72	106	375	55
Total Analysis Volume [veh/h]	426	1091	211	196	852	306	268	1189	287	425	1498	219
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.21	0.12	0.06	0.17	0.18	0.08	0.29	0.29	0.13	0.29	0.13
Intersection LOS	C											
Intersection V/C	0.770											

Intersection Level Of Service Report
Intersection 11: Puente Street at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.589

Intersection Setup

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	35	47	81	163	104	204	125	1421	37	103	1643	253
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	35	47	81	163	104	204	125	1421	37	103	1643	253
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	12	20	41	26	51	31	355	9	26	411	63
Total Analysis Volume [veh/h]	35	47	81	163	104	204	125	1421	37	103	1643	253
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.03	0.05	0.10	0.03	0.12	0.07	0.29	0.29	0.06	0.32	0.15
Intersection LOS	A											
Intersection V/C	0.589											

Intersection Level Of Service Report
Intersection 12: Brea Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.773

Intersection Setup

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	504	802	243	205	629	175	187	1650	405	224	1687	138
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	504	802	243	205	629	175	187	1650	405	224	1687	138
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	126	201	61	51	157	44	47	413	101	56	422	35
Total Analysis Volume [veh/h]	504	802	243	205	629	175	187	1650	405	224	1687	138
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.15	0.16	0.14	0.06	0.19	0.10	0.06	0.32	0.24	0.07	0.33	0.08
Intersection LOS	C											
Intersection V/C	0.773											

Intersection Level Of Service Report
Intersection 13: Randolph Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.647

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	43	33	59	314	24	208	245	1593	27	56	1841	322
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	43	33	59	314	24	208	245	1593	27	56	1841	322
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	8	15	79	6	52	61	398	7	14	460	81
Total Analysis Volume [veh/h]	43	33	59	314	24	208	245	1593	27	56	1841	322
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.03	0.03	0.09	0.14	0.14	0.07	0.32	0.32	0.03	0.36	0.19
Intersection LOS	B											
Intersection V/C	0.647											

Intersection Level Of Service Report
Intersection 14: State College Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.862

Intersection Setup

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	351	536	344	417	275	93	107	1759	91	439	1787	465
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	351	536	344	417	275	93	107	1759	91	439	1787	465
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	88	134	86	104	69	23	27	440	23	110	447	116
Total Analysis Volume [veh/h]	351	536	344	417	275	93	107	1759	91	439	1787	465
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.16	0.20	0.21	0.11	0.11	0.03	0.27	0.27	0.13	0.35	0.07
Intersection LOS	D											
Intersection V/C	0.862											

Intersection Level Of Service Report
Intersection 15: SR-57 SB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.705

Intersection Setup

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	0	0	0	651	0	522	0	1637	902	0	2170	386
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	651	0	522	0	1637	902	0	2170	386
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	163	0	131	0	409	226	0	543	97
Total Analysis Volume [veh/h]	0	0	0	651	0	522	0	1637	902	0	2170	386
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	7	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.19	0.00	0.23	0.00	0.32	0.00	0.00	0.43	0.00
Intersection LOS	C											
Intersection V/C	0.705											

Intersection Level Of Service Report
Intersection 16: SR-57 NB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.712

Intersection Setup

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	886	72	408	0	0	231	206	1738	360	0	2267	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	886	72	408	0	0	231	206	1738	360	0	2267	46
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	222	18	102	0	0	58	52	435	90	0	567	12
Total Analysis Volume [veh/h]	886	72	408	0	0	231	206	1738	360	0	2267	46
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Overlap	Protecte	Permiss	Unsigna	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	0	5	5	2	0	0	6	0
Auxiliary Signal Groups						5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.17	0.20	0.20	0.00	0.00	0.00	0.12	0.34	0.00	0.00	0.34	0.34
Intersection LOS	C											
Intersection V/C	0.712											

Intersection Level Of Service Report
Intersection 17: Associated Road at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.780

Intersection Setup

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	211	252	82	284	339	218	247	1745	137	170	1641	166
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	211	252	82	284	339	218	247	1745	137	170	1641	166
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	53	63	21	71	85	55	62	436	34	43	410	42
Total Analysis Volume [veh/h]	211	252	82	284	339	218	247	1745	137	170	1641	166
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.10	0.10	0.08	0.20	0.13	0.15	0.37	0.37	0.10	0.27	0.27
Intersection LOS	C											
Intersection V/C	0.780											

Intersection Level Of Service Report
Intersection 18: Castlegate Lane/Placentia Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.699

Intersection Setup

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	235	46	258	24	22	14	18	1755	274	224	1806	55
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	235	46	258	24	22	14	18	1755	274	224	1806	55
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	59	12	65	6	6	4	5	439	69	56	452	14
Total Analysis Volume [veh/h]	235	46	258	24	22	14	18	1755	274	224	1806	55
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.08	0.15	0.01	0.02	0.02	0.01	0.34	0.16	0.13	0.36	0.36
Intersection LOS	B											
Intersection V/C	0.699											

Brea Mall Expansion, Brea

Vistro File: N:\...\4099 ICU Network.vistro
Report File: N:\...\Sat Ex.pdf

Scenario 3 Sat MD Existing
4/12/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State College Boulevard at Lambert Road	Signalized	ICU 1	WB Thru	0.679	-	B
2	SR-57 SB Ramps at Lambert Road	Signalized	ICU 1	SB Right	0.730	-	C
3	SR-57 NB Ramps at Lambert Road	Signalized	ICU 1	NB Left	0.686	-	B
4	Randolph Avenue at Birch Street	Signalized	ICU 1	WB Thru	0.468	-	A
5	State College Boulevard at Birch Street	Signalized	ICU 1	SB Thru	0.633	-	B
6	S Associated Road at Birch Street	Signalized	ICU 1	EB Thru	0.514	-	A
7	Randolph Avenue at Madison Way	Signalized	ICU 1	NB Thru	0.291	-	A
8	Randolph Avenue at Brea Mall	Signalized	ICU 1	NB Thru	0.449	-	A
9	Brea Mall South at State College Boulevard	Signalized	ICU 1	EB Left	0.588	-	A
10	Harbor Boulevard at Imperial Highway	Signalized	ICU 1	EB Thru	0.681	-	B
11	Puente Street at Imperial Highway	Signalized	ICU 1	WB Thru	0.477	-	A
12	Brea Boulevard at Imperial Highway	Signalized	ICU 1	EB Thru	0.779	-	C
13	Randolph Avenue at Imperial Highway	Signalized	ICU 1	WB Thru	0.720	-	C
14	State College Boulevard at Imperial Highway	Signalized	ICU 1	WB Thru	1.092	-	F
15	SR-57 SB Ramps at Imperial Highway	Signalized	ICU 1	WB Thru	0.779	-	C
16	SR-57 NB Ramps at Imperial Highway	Signalized	ICU 1	EB Thru	0.831	-	D
17	Associated Road at Imperial Highway	Signalized	ICU 1	EB Thru	0.713	-	C
18	Castlegate Lane/Placentia	Signalized	ICU 1	EB Thru	0.675		B

16	Avenue at Imperial Highway	Signalized	ICU 1	EB Thru	0.675	-	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: State College Boulevard at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.679

Intersection Setup

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	128	247	318	496	351	5	18	970	259	650	1334	689
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	128	247	318	496	351	5	18	970	259	650	1334	689
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	32	62	80	124	88	1	5	243	65	163	334	172
Total Analysis Volume [veh/h]	128	247	318	496	351	5	18	970	259	650	1334	689
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.11	0.11	0.15	0.10	0.10	0.01	0.18	0.18	0.19	0.26	0.26
Intersection LOS	B											
Intersection V/C	0.679											

Intersection Level Of Service Report
Intersection 2: SR-57 SB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.730

Intersection Setup

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	0	0	0	794	0	1020	0	1250	520	165	1654	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	794	0	1020	0	1250	520	165	1654	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	199	0	255	0	313	130	41	414	0
Total Analysis Volume [veh/h]	0	0	0	794	0	1020	0	1250	520	165	1654	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	7	0	0	0	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.23	0.00	0.36	0.00	0.26	0.26	0.05	0.32	0.00
Intersection LOS	C											
Intersection V/C	0.730											

Intersection Level Of Service Report
Intersection 3: SR-57 NB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.686

Intersection Setup

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	1031	0	421	0	0	0	539	1510	0	0	788	399
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1031	0	421	0	0	0	539	1510	0	0	788	399
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	258	0	105	0	0	0	135	378	0	0	197	100
Total Analysis Volume [veh/h]	1031	0	421	0	0	0	539	1510	0	0	788	399
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	0	0	0	0	0	5	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.30	0.00	0.25	0.00	0.00	0.00	0.16	0.30	0.00	0.00	0.17	0.17
Intersection LOS	B											
Intersection V/C	0.686											

Intersection Level Of Service Report
Intersection 4: Randolph Avenue at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.468

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Base Volume Input [veh/h]	96	74	168	54	37	77	86	564	121	146	710	25
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	96	74	168	54	37	77	86	564	121	146	710	25
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	19	42	14	9	19	22	141	30	37	178	6
Total Analysis Volume [veh/h]	96	74	168	54	37	77	86	564	121	146	710	25
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.04	0.10	0.03	0.07	0.07	0.05	0.20	0.20	0.09	0.21	0.01
Intersection LOS	A											
Intersection V/C	0.468											

Intersection Level Of Service Report
Intersection 5: State College Boulevard at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.633

Intersection Setup

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Base Volume Input [veh/h]	123	263	176	252	549	429	225	691	162	164	656	216
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	123	263	176	252	549	429	225	691	162	164	656	216
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	31	66	44	63	137	107	56	173	41	41	164	54
Total Analysis Volume [veh/h]	123	263	176	252	549	429	225	691	162	164	656	216
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.08	0.10	0.07	0.29	0.29	0.07	0.20	0.10	0.05	0.19	0.13
Intersection LOS	B											
Intersection V/C	0.633											

Intersection Level Of Service Report
Intersection 6: S Associated Road at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.514

Intersection Setup

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Base Volume Input [veh/h]	318	19	167	12	21	13	8	705	334	152	689	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	318	19	167	12	21	13	8	705	334	152	689	13
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	80	5	42	3	5	3	2	176	84	38	172	3
Total Analysis Volume [veh/h]	318	19	167	12	21	13	8	705	334	152	689	13
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	8	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups			1,8									
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.01	0.05	0.01	0.02	0.02	0.00	0.31	0.31	0.04	0.21	0.21
Intersection LOS	A											
Intersection V/C	0.514											

Intersection Level Of Service Report
Intersection 7: Randolph Avenue at Madison Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.291

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Base Volume Input [veh/h]	21	273	111	69	259	20	34	11	58	80	4	57
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	21	273	111	69	259	20	34	11	58	80	4	57
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	68	28	17	65	5	9	3	15	20	1	14
Total Analysis Volume [veh/h]	21	273	111	69	259	20	34	11	58	80	4	57
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.11	0.11	0.04	0.08	0.08	0.02	0.04	0.04	0.05	0.04	0.04
Intersection LOS	A											
Intersection V/C	0.291											

Intersection Level Of Service Report
Intersection 8: Randolph Avenue at Brea Mall

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.449

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Base Volume Input [veh/h]	22	324	414	41	292	21	24	14	26	380	6	75
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	22	324	414	41	292	21	24	14	26	380	6	75
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	81	104	10	73	5	6	4	7	95	2	19
Total Analysis Volume [veh/h]	22	324	414	41	292	21	24	14	26	380	6	75
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.22	0.22	0.02	0.09	0.09	0.01	0.02	0.02	0.11	0.18	0.18
Intersection LOS	A											
Intersection V/C	0.449											

Intersection Level Of Service Report
Intersection 9: Brea Mall South at State College Boulevard

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.588

Intersection Setup

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Base Volume Input [veh/h]	168	24	90	60	19	509	651	350	29	86	583	35
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	168	24	90	60	19	509	651	350	29	86	583	35
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	42	6	23	15	5	127	163	88	7	22	146	9
Total Analysis Volume [veh/h]	168	24	90	60	19	509	651	350	29	86	583	35
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	4	5	2	0	1	6	0
Auxiliary Signal Groups						4,5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.06	0.05	0.04	0.01	0.11	0.19	0.11	0.11	0.05	0.18	0.18
Intersection LOS	A											
Intersection V/C	0.588											

Intersection Level Of Service Report
Intersection 10: Harbor Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.681

Intersection Setup

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	343	746	198	210	775	270	315	1105	272	345	1206	175
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	343	746	198	210	775	270	315	1105	272	345	1206	175
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	86	187	50	53	194	68	79	276	68	86	302	44
Total Analysis Volume [veh/h]	343	746	198	210	775	270	315	1105	272	345	1206	175
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.15	0.12	0.06	0.15	0.16	0.09	0.27	0.27	0.10	0.24	0.10
Intersection LOS	B											
Intersection V/C	0.681											

Intersection Level Of Service Report
Intersection 11: Puente Street at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.477

Intersection Setup

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	26	30	93	121	42	114	69	1269	36	77	1308	148
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	30	93	121	42	114	69	1269	36	77	1308	148
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	8	23	30	11	29	17	317	9	19	327	37
Total Analysis Volume [veh/h]	26	30	93	121	42	114	69	1269	36	77	1308	148
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

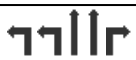
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.02	0.05	0.07	0.01	0.07	0.04	0.26	0.26	0.05	0.26	0.09
Intersection LOS	A											
Intersection V/C	0.477											

Intersection Level Of Service Report
Intersection 12: Brea Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.779

Intersection Setup

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	399	471	260	259	826	173	176	1379	255	333	1305	145
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	399	471	260	259	826	173	176	1379	255	333	1305	145
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	100	118	65	65	207	43	44	345	64	83	326	36
Total Analysis Volume [veh/h]	399	471	260	259	826	173	176	1379	255	333	1305	145
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.12	0.09	0.15	0.08	0.24	0.10	0.05	0.27	0.15	0.10	0.26	0.09
Intersection LOS	C											
Intersection V/C	0.779											

Intersection Level Of Service Report
Intersection 13: Randolph Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.720

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	67	38	172	398	76	285	307	1422	32	109	1561	450
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	67	38	172	398	76	285	307	1422	32	109	1561	450
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	10	43	100	19	71	77	356	8	27	390	113
Total Analysis Volume [veh/h]	67	38	172	398	76	285	307	1422	32	109	1561	450
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.06	0.06	0.12	0.21	0.21	0.09	0.29	0.29	0.06	0.31	0.26
Intersection LOS	C											
Intersection V/C	0.720											

Intersection Level Of Service Report
Intersection 14: State College Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.092

Intersection Setup

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	265	499	562	561	376	177	132	1491	176	633	1763	922
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	265	499	562	561	376	177	132	1491	176	633	1763	922
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	66	125	141	140	94	44	33	373	44	158	441	231
Total Analysis Volume [veh/h]	265	499	562	561	376	177	132	1491	176	633	1763	922
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.15	0.33	0.28	0.16	0.16	0.04	0.25	0.25	0.19	0.35	0.26
Intersection LOS	F											
Intersection V/C	1.092											

Intersection Level Of Service Report
Intersection 15: SR-57 SB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.779

Intersection Setup

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	0	0	0	536	0	726	0	1895	1011	0	2455	353
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	536	0	726	0	1895	1011	0	2455	353
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	134	0	182	0	474	253	0	614	88
Total Analysis Volume [veh/h]	0	0	0	536	0	726	0	1895	1011	0	2455	353
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	7	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.16	0.00	0.25	0.00	0.37	0.00	0.00	0.48	0.00
Intersection LOS	C											
Intersection V/C	0.779											

Intersection Level Of Service Report
Intersection 16: SR-57 NB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.831

Intersection Setup

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	1261	117	552	0	0	371	388	1727	554	0	1771	60
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1261	117	552	0	0	371	388	1727	554	0	1771	60
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	315	29	138	0	0	93	97	432	139	0	443	15
Total Analysis Volume [veh/h]	1261	117	552	0	0	371	388	1727	554	0	1771	60
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Overlap	Protecte	Permiss	Unsigna	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	0	5	5	2	0	0	6	0
Auxiliary Signal Groups						5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.25	0.28	0.28	0.00	0.00	0.00	0.23	0.34	0.00	0.00	0.27	0.27
Intersection LOS	D											
Intersection V/C	0.831											

Intersection Level Of Service Report
Intersection 17: Associated Road at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.713

Intersection Setup

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	238	181	109	324	233	180	211	1652	239	144	1449	205
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	238	181	109	324	233	180	211	1652	239	144	1449	205
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	60	45	27	81	58	45	53	413	60	36	362	51
Total Analysis Volume [veh/h]	238	181	109	324	233	180	211	1652	239	144	1449	205
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.09	0.09	0.10	0.14	0.11	0.12	0.37	0.37	0.08	0.24	0.24
Intersection LOS	C											
Intersection V/C	0.713											

Intersection Level Of Service Report
Intersection 18: Castlegate Lane/Placentia Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.675

Intersection Setup

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	154	17	231	25	11	12	24	1817	272	200	1727	45
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	154	17	231	25	11	12	24	1817	272	200	1727	45
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	4	58	6	3	3	6	454	68	50	432	11
Total Analysis Volume [veh/h]	154	17	231	25	11	12	24	1817	272	200	1727	45
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.05	0.14	0.01	0.01	0.01	0.01	0.36	0.16	0.12	0.35	0.35
Intersection LOS	B											
Intersection V/C	0.675											

APPENDIX C-II

YEAR 2026 TRAFFIC CONDITIONS

Brea Mall Expansion, Brea

Vistro File: N:\...\4099 ICU Network.vistro
Report File: N:\...\AM 2026.pdf

Scenario 4 AM 2026
4/12/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State College Boulevard at Lambert Road	Signalized	ICU 1	WB Thru	0.784	-	C
2	SR-57 SB Ramps at Lambert Road	Signalized	ICU 1	WB Thru	0.810	-	D
3	SR-57 NB Ramps at Lambert Road	Signalized	ICU 1	EB Thru	0.869	-	D
4	Randolph Avenue at Birch Street	Signalized	ICU 1	EB Right	0.385	-	A
5	State College Boulevard at Birch Street	Signalized	ICU 1	SB Right	0.609	-	B
6	S Associated Road at Birch Street	Signalized	ICU 1	EB Thru	0.662	-	B
7	Randolph Avenue at Madison Way	Signalized	ICU 1	NB Right	0.144	-	A
8	Randolph Avenue at Brea Mall	Signalized	ICU 1	NB Thru	0.143	-	A
9	Brea Mall South at State College Boulevard	Signalized	ICU 1	WB Thru	0.204	-	A
10	Harbor Boulevard at Imperial Highway	Signalized	ICU 1	EB Right	0.840	-	D
11	Puente Street at Imperial Highway	Signalized	ICU 1	EB Thru	0.651	-	B
12	Brea Boulevard at Imperial Highway	Signalized	ICU 1	WB Thru	0.865	-	D
13	Randolph Avenue at Imperial Highway	Signalized	ICU 1	WB Thru	0.484	-	A
14	State College Boulevard at Imperial Highway	Signalized	ICU 1	WB Thru	0.765	-	C
15	SR-57 SB Ramps at Imperial Highway	Signalized	ICU 1	WB Thru	0.655	-	B
16	SR-57 NB Ramps at Imperial Highway	Signalized	ICU 1	EB Thru	0.618	-	B
17	Associated Road at Imperial Highway	Signalized	ICU 1	EB Thru	0.746	-	C
18	Castlegate Lane/Placentia	Signalized	ICU 1	EB Thru	0.643		B

16	Avenue at Imperial Highway	Signalized	ICU 1	EB Thru	0.643	-	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: State College Boulevard at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.784

Intersection Setup

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	173	222	206	926	617	8	15	1400	212	479	1794	576
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	173	222	206	926	617	8	15	1400	212	479	1794	576
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	43	56	52	232	154	2	4	350	53	120	449	144
Total Analysis Volume [veh/h]	173	222	206	926	617	8	15	1400	212	479	1794	576
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.08	0.08	0.27	0.18	0.18	0.00	0.24	0.24	0.14	0.35	0.07
Intersection LOS	C											
Intersection V/C	0.784											

Intersection Level Of Service Report
Intersection 2: SR-57 SB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.810

Intersection Setup

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	0	0	0	1071	0	708	0	1902	635	246	2202	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	1071	0	708	0	1902	635	246	2202	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	268	0	177	0	476	159	62	551	0
Total Analysis Volume [veh/h]	0	0	0	1071	0	708	0	1902	635	246	2202	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	7	0	0	0	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.32	0.00	0.21	0.00	0.37	0.19	0.07	0.43	0.00
Intersection LOS	D											
Intersection V/C	0.810											

Intersection Level Of Service Report
Intersection 3: SR-57 NB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.869

Intersection Setup

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	1080	0	512	0	0	0	0	2555	408	0	1380	498
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1080	0	512	0	0	0	0	2555	408	0	1380	498
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	270	0	128	0	0	0	0	639	102	0	345	0
Total Analysis Volume [veh/h]	1080	0	512	0	0	0	0	2555	408	0	1380	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Unsigna
Signal Group	3	0	0	0	0	0	5	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.32	0.00	0.30	0.00	0.00	0.00	0.00	0.50	0.24	0.00	0.27	0.00
Intersection LOS	D											
Intersection V/C	0.869											

Intersection Level Of Service Report
Intersection 4: Randolph Avenue at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.385

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Base Volume Input [veh/h]	25	42	93	38	36	26	41	622	94	80	566	45
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	25	42	93	38	36	26	41	622	94	80	566	45
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	11	23	10	9	7	10	156	24	20	142	11
Total Analysis Volume [veh/h]	25	42	93	38	36	26	41	622	94	80	566	45
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.02	0.05	0.02	0.04	0.04	0.02	0.21	0.21	0.05	0.17	0.03
Intersection LOS	A											
Intersection V/C	0.385											

Intersection Level Of Service Report
Intersection 5: State College Boulevard at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.609

Intersection Setup

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Base Volume Input [veh/h]	80	151	100	696	864	232	115	543	50	81	596	304
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	151	100	696	864	232	115	543	50	81	596	304
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	38	25	174	216	58	29	136	13	20	149	76
Total Analysis Volume [veh/h]	80	151	100	696	864	232	115	543	50	81	596	304
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.04	0.06	0.20	0.32	0.32	0.03	0.16	0.03	0.02	0.18	0.18
Intersection LOS	B											
Intersection V/C	0.609											

Intersection Level Of Service Report
Intersection 6: S Associated Road at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.662

Intersection Setup

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Base Volume Input [veh/h]	255	6	323	57	29	9	5	986	335	357	803	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	255	6	323	57	29	9	5	986	335	357	803	11
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	64	2	81	14	7	2	1	247	84	89	201	3
Total Analysis Volume [veh/h]	255	6	323	57	29	9	5	986	335	357	803	11
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	8	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups			1,8									
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.00	0.09	0.03	0.02	0.02	0.00	0.39	0.39	0.11	0.24	0.24
Intersection LOS	B											
Intersection V/C	0.662											

Intersection Level Of Service Report
Intersection 7: Randolph Avenue at Madison Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.144

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Base Volume Input [veh/h]	26	139	8	6	130	17	35	2	59	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	139	8	6	130	17	35	2	59	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	35	2	2	33	4	9	1	15	0	0	0
Total Analysis Volume [veh/h]	26	139	8	6	130	17	35	2	59	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.04	0.04	0.00	0.04	0.04	0.02	0.04	0.04	0.00	0.00	0.00
Intersection LOS	A											
Intersection V/C	0.144											

Intersection Level Of Service Report
Intersection 8: Randolph Avenue at Brea Mall

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.143

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Base Volume Input [veh/h]	14	181	69	16	158	6	1	0	1	27	0	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	181	69	16	158	6	1	0	1	27	0	5
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	45	17	4	40	2	0	0	0	7	0	1
Total Analysis Volume [veh/h]	14	181	69	16	158	6	1	0	1	27	0	5
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.07	0.07	0.01	0.05	0.05	0.00	0.00	0.00	0.01	0.00	0.01
Intersection LOS	A											
Intersection V/C	0.143											

Intersection Level Of Service Report
Intersection 9: Brea Mall South at State College Boulevard

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.204

Intersection Setup

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Base Volume Input [veh/h]	33	9	16	3	6	28	80	270	16	28	381	12
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	33	9	16	3	6	28	80	270	16	28	381	12
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	2	4	1	2	7	20	68	4	7	95	3
Total Analysis Volume [veh/h]	33	9	16	3	6	28	80	270	16	28	381	12
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	4	5	2	0	1	6	0
Auxiliary Signal Groups						4,5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.01	0.00	0.00	0.00	0.02	0.08	0.08	0.02	0.12	0.12
Intersection LOS	A											
Intersection V/C	0.204											

Intersection Level Of Service Report
Intersection 10: Harbor Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.840

Intersection Setup

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	314	712	279	170	1318	318	289	1395	375	313	1247	262
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	314	712	279	170	1318	318	289	1395	375	313	1247	262
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	79	178	70	43	330	80	72	349	94	78	312	66
Total Analysis Volume [veh/h]	314	712	279	170	1318	318	289	1395	375	313	1247	262
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.14	0.16	0.05	0.26	0.19	0.09	0.35	0.35	0.09	0.24	0.15
Intersection LOS	D											
Intersection V/C	0.840											

Intersection Level Of Service Report
Intersection 11: Puente Street at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.651

Intersection Setup

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	61	118	158	136	87	148	234	1447	81	50	1479	173
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	61	118	158	136	87	148	234	1447	81	50	1479	173
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	30	40	34	22	37	59	362	20	13	370	43
Total Analysis Volume [veh/h]	61	118	158	136	87	148	234	1447	81	50	1479	173
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

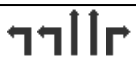
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.07	0.09	0.08	0.03	0.09	0.14	0.30	0.30	0.03	0.29	0.10
Intersection LOS	B											
Intersection V/C	0.651											

Intersection Level Of Service Report
Intersection 12: Brea Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.865

Intersection Setup

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	450	501	158	172	1032	209	166	1604	367	167	1685	116
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	450	501	158	172	1032	209	166	1604	367	167	1685	116
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	113	125	40	43	258	52	42	401	92	42	421	29
Total Analysis Volume [veh/h]	450	501	158	172	1032	209	166	1604	367	167	1685	116
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.10	0.09	0.05	0.30	0.12	0.05	0.31	0.22	0.05	0.33	0.07
Intersection LOS	D											
Intersection V/C	0.865											

Intersection Level Of Service Report
Intersection 13: Randolph Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.484

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	37	19	68	133	21	32	62	1683	26	41	1790	154
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	37	19	68	133	21	32	62	1683	26	41	1790	154
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	5	17	33	5	8	16	421	7	10	448	39
Total Analysis Volume [veh/h]	37	19	68	133	21	32	62	1683	26	41	1790	154
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

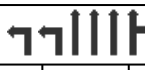
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.03	0.03	0.04	0.03	0.03	0.02	0.34	0.34	0.02	0.35	0.09
Intersection LOS	A											
Intersection V/C	0.484											

Intersection Level Of Service Report
Intersection 14: State College Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.765

Intersection Setup

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	115	160	429	102	392	28	35	1684	194	462	1845	146
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	115	160	429	102	392	28	35	1684	194	462	1845	146
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	29	40	107	26	98	7	9	421	49	116	461	37
Total Analysis Volume [veh/h]	115	160	429	102	392	28	35	1684	194	462	1845	146
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.05	0.25	0.05	0.12	0.12	0.01	0.28	0.28	0.14	0.36	0.03
Intersection LOS	C											
Intersection V/C	0.765											

Intersection Level Of Service Report
Intersection 15: SR-57 SB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.655

Intersection Setup

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	0	0	0	611	0	512	0	1539	726	0	1965	202
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	611	0	512	0	1539	726	0	1965	202
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	153	0	128	0	385	182	0	491	51
Total Analysis Volume [veh/h]	0	0	0	611	0	512	0	1539	726	0	1965	202
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	7	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.18	0.00	0.22	0.00	0.30	0.00	0.00	0.39	0.00
Intersection LOS	B											
Intersection V/C	0.655											

Intersection Level Of Service Report
Intersection 16: SR-57 NB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.618

Intersection Setup

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	1020	31	850	0	0	86	98	1432	562	0	1552	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1020	31	850	0	0	86	98	1432	562	0	1552	14
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	255	8	213	0	0	22	25	358	141	0	388	4
Total Analysis Volume [veh/h]	1020	31	850	0	0	86	98	1432	562	0	1552	14
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Overlap	Protecte	Permiss	Unsigna	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	0	5	5	2	0	0	6	0
Auxiliary Signal Groups						5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.20	0.28	0.28	0.00	0.00	0.00	0.06	0.28	0.00	0.00	0.23	0.23
Intersection LOS	B											
Intersection V/C	0.618											

Intersection Level Of Service Report
Intersection 17: Associated Road at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.746

Intersection Setup

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	151	211	73	170	335	166	216	1936	102	93	1673	102
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	151	211	73	170	335	166	216	1936	102	93	1673	102
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	38	53	18	43	84	42	54	484	26	23	418	26
Total Analysis Volume [veh/h]	151	211	73	170	335	166	216	1936	102	93	1673	102
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.08	0.08	0.05	0.20	0.10	0.13	0.40	0.40	0.05	0.26	0.26
Intersection LOS	C											
Intersection V/C	0.746											

Intersection Level Of Service Report
Intersection 18: Castlegate Lane/Placentia Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.643

Intersection Setup

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	177	12	149	25	28	15	14	1914	364	178	1550	33
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	177	12	149	25	28	15	14	1914	364	178	1550	33
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	44	3	37	6	7	4	4	479	91	45	388	8
Total Analysis Volume [veh/h]	177	12	149	25	28	15	14	1914	364	178	1550	33
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.06	0.09	0.01	0.03	0.03	0.01	0.38	0.21	0.10	0.31	0.31
Intersection LOS	B											
Intersection V/C	0.643											

Brea Mall Expansion, Brea

Vistro File: N:\...\4099 ICU Network.vistro
Report File: N:\...\PM 2026.pdf

Scenario 5 PM 2026
4/12/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State College Boulevard at Lambert Road	Signalized	ICU 1	WB Right	0.787	-	C
2	SR-57 SB Ramps at Lambert Road	Signalized	ICU 1	WB Thru	0.671	-	B
3	SR-57 NB Ramps at Lambert Road	Signalized	ICU 1	EB Thru	0.571	-	A
4	Randolph Avenue at Birch Street	Signalized	ICU 1	WB Thru	0.611	-	B
5	State College Boulevard at Birch Street	Signalized	ICU 1	WB Right	0.783	-	C
6	S Associated Road at Birch Street	Signalized	ICU 1	WB Thru	0.667	-	B
7	Randolph Avenue at Madison Way	Signalized	ICU 1	NB Thru	0.252	-	A
8	Randolph Avenue at Brea Mall	Signalized	ICU 1	NB Thru	0.374	-	A
9	Brea Mall South at State College Boulevard	Signalized	ICU 1	EB Thru	0.470	-	A
10	Harbor Boulevard at Imperial Highway	Signalized	ICU 1	WB Thru	0.870	-	D
11	Puente Street at Imperial Highway	Signalized	ICU 1	WB Thru	0.650	-	B
12	Brea Boulevard at Imperial Highway	Signalized	ICU 1	WB Thru	0.847	-	D
13	Randolph Avenue at Imperial Highway	Signalized	ICU 1	WB Thru	0.709	-	C
14	State College Boulevard at Imperial Highway	Signalized	ICU 1	WB Thru	0.937	-	E
15	SR-57 SB Ramps at Imperial Highway	Signalized	ICU 1	WB Thru	0.766	-	C
16	SR-57 NB Ramps at Imperial Highway	Signalized	ICU 1	EB Thru	0.756	-	C
17	Associated Road at Imperial Highway	Signalized	ICU 1	EB Thru	0.834	-	D
18	Castlegate Lane/Placentia	Signalized	ICU 1	WB Thru	0.753		C

16	Avenue at Imperial Highway	Signalized	ICU 1	WB Thru	0.733	-	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: State College Boulevard at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.787

Intersection Setup

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	326	615	319	587	411	16	40	1506	269	409	1200	741
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	326	615	319	587	411	16	40	1506	269	409	1200	741
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	82	154	80	147	103	4	10	377	67	102	300	185
Total Analysis Volume [veh/h]	326	615	319	587	411	16	40	1506	269	409	1200	741
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.18	0.18	0.17	0.13	0.13	0.01	0.26	0.26	0.12	0.24	0.26
Intersection LOS	C											
Intersection V/C	0.787											

Intersection Level Of Service Report
Intersection 2: SR-57 SB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.671

Intersection Setup

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	0	0	0	470	0	870	0	1477	857	257	1789	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	470	0	870	0	1477	857	257	1789	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	118	0	218	0	369	214	64	447	0
Total Analysis Volume [veh/h]	0	0	0	470	0	870	0	1477	857	257	1789	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	7	0	0	0	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.14	0.00	0.26	0.00	0.29	0.25	0.08	0.35	0.00
Intersection LOS	B											
Intersection V/C	0.671											

Intersection Level Of Service Report
Intersection 3: SR-57 NB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.571

Intersection Setup

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	693	0	301	0	0	0	0	1572	586	0	1170	539
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	693	0	301	0	0	0	0	1572	586	0	1170	539
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	173	0	75	0	0	0	0	393	147	0	293	0
Total Analysis Volume [veh/h]	693	0	301	0	0	0	0	1572	586	0	1170	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Unsigna
Signal Group	3	0	0	0	0	0	5	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.20	0.00	0.18	0.00	0.00	0.00	0.00	0.32	0.32	0.00	0.23	0.00
Intersection LOS	A											
Intersection V/C	0.571											

Intersection Level Of Service Report
Intersection 4: Randolph Avenue at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.611

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Base Volume Input [veh/h]	136	58	174	52	50	110	80	730	98	196	1154	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	136	58	174	52	50	110	80	730	98	196	1154	40
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	15	44	13	13	28	20	183	25	49	289	10
Total Analysis Volume [veh/h]	136	58	174	52	50	110	80	730	98	196	1154	40
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.03	0.10	0.03	0.09	0.09	0.05	0.24	0.24	0.12	0.34	0.02
Intersection LOS	B											
Intersection V/C	0.611											

Intersection Level Of Service Report
Intersection 5: State College Boulevard at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.783

Intersection Setup

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Base Volume Input [veh/h]	148	426	162	351	378	328	293	800	162	147	1023	673
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	148	426	162	351	378	328	293	800	162	147	1023	673
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	107	41	88	95	82	73	200	41	37	256	168
Total Analysis Volume [veh/h]	148	426	162	351	378	328	293	800	162	147	1023	673
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.13	0.10	0.10	0.21	0.21	0.09	0.24	0.10	0.04	0.30	0.40
Intersection LOS	C											
Intersection V/C	0.783											

Intersection Level Of Service Report
Intersection 6: S Associated Road at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.667

Intersection Setup

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Base Volume Input [veh/h]	500	33	355	11	20	9	16	931	314	295	1318	18
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	500	33	355	11	20	9	16	931	314	295	1318	18
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	125	8	89	3	5	2	4	233	79	74	330	5
Total Analysis Volume [veh/h]	500	33	355	11	20	9	16	931	314	295	1318	18
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	8	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups			1,8									
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.15	0.02	0.12	0.01	0.02	0.02	0.01	0.37	0.37	0.09	0.39	0.39
Intersection LOS	B											
Intersection V/C	0.667											

Intersection Level Of Service Report
Intersection 7: Randolph Avenue at Madison Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.252

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Base Volume Input [veh/h]	48	325	43	28	260	30	65	4	52	75	4	38
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	48	325	43	28	260	30	65	4	52	75	4	38
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	81	11	7	65	8	16	1	13	19	1	10
Total Analysis Volume [veh/h]	48	325	43	28	260	30	65	4	52	75	4	38
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.11	0.11	0.02	0.09	0.09	0.04	0.03	0.03	0.04	0.02	0.02
Intersection LOS	A											
Intersection V/C	0.252											

Intersection Level Of Service Report
Intersection 8: Randolph Avenue at Brea Mall

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.374

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Base Volume Input [veh/h]	17	338	322	37	373	20	18	3	12	274	3	47
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	338	322	37	373	20	18	3	12	274	3	47
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	85	81	9	93	5	5	1	3	69	1	12
Total Analysis Volume [veh/h]	17	338	322	37	373	20	18	3	12	274	3	47
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.19	0.19	0.02	0.12	0.12	0.01	0.01	0.01	0.08	0.13	0.13
Intersection LOS	A											
Intersection V/C	0.374											

Intersection Level Of Service Report
Intersection 9: Brea Mall South at State College Boulevard

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.470

Intersection Setup

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Base Volume Input [veh/h]	144	25	67	45	19	383	494	568	23	99	467	27
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	144	25	67	45	19	383	494	568	23	99	467	27
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	6	17	11	5	96	124	142	6	25	117	7
Total Analysis Volume [veh/h]	144	25	67	45	19	383	494	568	23	99	467	27
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	4	5	2	0	1	6	0
Auxiliary Signal Groups						4,5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.05	0.04	0.03	0.01	0.08	0.15	0.17	0.17	0.06	0.15	0.15
Intersection LOS	A											
Intersection V/C	0.470											

Intersection Level Of Service Report
Intersection 10: Harbor Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.870

Intersection Setup

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	443	1174	232	274	976	418	320	1289	298	450	1606	285
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	443	1174	232	274	976	418	320	1289	298	450	1606	285
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	111	294	58	69	244	105	80	322	75	113	402	71
Total Analysis Volume [veh/h]	443	1174	232	274	976	418	320	1289	298	450	1606	285
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.23	0.14	0.08	0.19	0.25	0.09	0.31	0.31	0.13	0.31	0.17
Intersection LOS	D											
Intersection V/C	0.870											

Intersection Level Of Service Report
Intersection 11: Puente Street at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.650

Intersection Setup

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	36	49	84	189	108	217	139	1613	38	107	1824	279
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	36	49	84	189	108	217	139	1613	38	107	1824	279
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	12	21	47	27	54	35	403	10	27	456	70
Total Analysis Volume [veh/h]	36	49	84	189	108	217	139	1613	38	107	1824	279
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.03	0.05	0.11	0.03	0.13	0.08	0.32	0.32	0.06	0.36	0.16
Intersection LOS	B											
Intersection V/C	0.650											

Intersection Level Of Service Report
Intersection 12: Brea Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.847

Intersection Setup

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	536	890	276	264	696	217	242	1836	433	253	1850	197
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	536	890	276	264	696	217	242	1836	433	253	1850	197
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	134	223	69	66	174	54	61	459	108	63	463	49
Total Analysis Volume [veh/h]	536	890	276	264	696	217	242	1836	433	253	1850	197
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.16	0.17	0.16	0.08	0.20	0.13	0.07	0.36	0.25	0.07	0.36	0.12
Intersection LOS	D											
Intersection V/C	0.847											

Intersection Level Of Service Report
Intersection 13: Randolph Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.709

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	58	39	69	333	30	219	257	1807	45	73	2051	339
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	58	39	69	333	30	219	257	1807	45	73	2051	339
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	10	17	83	8	55	64	452	11	18	513	85
Total Analysis Volume [veh/h]	58	39	69	333	30	219	257	1807	45	73	2051	339
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.03	0.03	0.10	0.15	0.15	0.08	0.36	0.36	0.04	0.40	0.20
Intersection LOS	C											
Intersection V/C	0.709											

Intersection Level Of Service Report
Intersection 14: State College Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.937

Intersection Setup

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	385	598	370	446	315	98	112	1975	112	474	1996	501
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	385	598	370	446	315	98	112	1975	112	474	1996	501
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	96	150	93	112	79	25	28	494	28	119	499	125
Total Analysis Volume [veh/h]	385	598	370	446	315	98	112	1975	112	474	1996	501
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.18	0.22	0.22	0.12	0.12	0.03	0.31	0.31	0.14	0.39	0.07
Intersection LOS	E											
Intersection V/C	0.937											

Intersection Level Of Service Report
Intersection 15: SR-57 SB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.766

Intersection Setup

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	0	0	0	687	0	558	0	1779	1031	0	2409	417
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	687	0	558	0	1779	1031	0	2409	417
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	172	0	140	0	445	258	0	602	104
Total Analysis Volume [veh/h]	0	0	0	687	0	558	0	1779	1031	0	2409	417
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	7	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.20	0.00	0.24	0.00	0.35	0.00	0.00	0.47	0.00
Intersection LOS	C											
Intersection V/C	0.766											

Intersection Level Of Service Report
Intersection 16: SR-57 NB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.756

Intersection Setup

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	1016	64	453	0	0	192	182	1920	381	0	2500	38
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1016	64	453	0	0	192	182	1920	381	0	2500	38
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	254	16	113	0	0	48	46	480	95	0	625	10
Total Analysis Volume [veh/h]	1016	64	453	0	0	192	182	1920	381	0	2500	38
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Overlap	Protecte	Permiss	Unsigna	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	0	5	5	2	0	0	6	0
Auxiliary Signal Groups						5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.20	0.23	0.23	0.00	0.00	0.00	0.11	0.38	0.00	0.00	0.37	0.37
Intersection LOS	C											
Intersection V/C	0.756											

Intersection Level Of Service Report
Intersection 17: Associated Road at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.834

Intersection Setup

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	220	262	86	297	353	261	279	1931	144	178	1808	191
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	220	262	86	297	353	261	279	1931	144	178	1808	191
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	66	22	74	88	65	70	483	36	45	452	48
Total Analysis Volume [veh/h]	220	262	86	297	353	261	279	1931	144	178	1808	191
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.10	0.10	0.09	0.21	0.15	0.16	0.41	0.41	0.10	0.29	0.29
Intersection LOS	D											
Intersection V/C	0.834											

Intersection Level Of Service Report
Intersection 18: Castlegate Lane/Placentia Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.753

Intersection Setup

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	248	48	272	26	23	15	19	1942	286	237	1992	58
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	248	48	272	26	23	15	19	1942	286	237	1992	58
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	62	12	68	7	6	4	5	486	72	59	498	15
Total Analysis Volume [veh/h]	248	48	272	26	23	15	19	1942	286	237	1992	58
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.09	0.16	0.02	0.02	0.02	0.01	0.38	0.17	0.14	0.40	0.40
Intersection LOS	C											
Intersection V/C	0.753											

Brea Mall Expansion, Brea

Vistro File: N:\...\4099 ICU Network.vistro
Report File: N:\...\Sat 2026.pdf

Scenario 6 Sat MD 2026
4/12/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State College Boulevard at Lambert Road	Signalized	ICU 1	WB Thru	0.781	-	C
2	SR-57 SB Ramps at Lambert Road	Signalized	ICU 1	WB Thru	0.785	-	C
3	SR-57 NB Ramps at Lambert Road	Signalized	ICU 1	EB Thru	0.729	-	C
4	Randolph Avenue at Birch Street	Signalized	ICU 1	WB Thru	0.529	-	A
5	State College Boulevard at Birch Street	Signalized	ICU 1	SB Thru	0.729	-	C
6	S Associated Road at Birch Street	Signalized	ICU 1	EB Right	0.559	-	A
7	Randolph Avenue at Madison Way	Signalized	ICU 1	NB Thru	0.302	-	A
8	Randolph Avenue at Brea Mall	Signalized	ICU 1	NB Right	0.493	-	A
9	Brea Mall South at State College Boulevard	Signalized	ICU 1	WB Thru	0.621	-	B
10	Harbor Boulevard at Imperial Highway	Signalized	ICU 1	EB Thru	0.730	-	C
11	Puente Street at Imperial Highway	Signalized	ICU 1	WB Thru	0.536	-	A
12	Brea Boulevard at Imperial Highway	Signalized	ICU 1	EB Thru	0.843	-	D
13	Randolph Avenue at Imperial Highway	Signalized	ICU 1	WB Thru	0.857	-	D
14	State College Boulevard at Imperial Highway	Signalized	ICU 1	WB Thru	1.185	-	F
15	SR-57 SB Ramps at Imperial Highway	Signalized	ICU 1	WB Thru	0.862	-	D
16	SR-57 NB Ramps at Imperial Highway	Signalized	ICU 1	EB Thru	0.813	-	D
17	Associated Road at Imperial Highway	Signalized	ICU 1	EB Thru	0.774	-	C
18	Castlegate Lane/Placentia	Signalized	ICU 1	EB Thru	0.732		C

16	Avenue at Imperial Highway	Signalized	ICU 1	EB Thru	0.732	-	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: State College Boulevard at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.781

Intersection Setup

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	139	276	389	547	387	5	19	1230	276	743	1631	751
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	139	276	389	547	387	5	19	1230	276	743	1631	751
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	35	69	97	137	97	1	5	308	69	186	408	188
Total Analysis Volume [veh/h]	139	276	389	547	387	5	19	1230	276	743	1631	751
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.13	0.13	0.16	0.12	0.12	0.01	0.22	0.22	0.22	0.32	0.28
Intersection LOS	C											
Intersection V/C	0.781											

Intersection Level Of Service Report
Intersection 2: SR-57 SB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.785

Intersection Setup

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	0	0	0	837	0	1247	0	1571	580	199	1876	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	837	0	1247	0	1571	580	199	1876	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	209	0	312	0	393	145	50	469	0
Total Analysis Volume [veh/h]	0	0	0	837	0	1247	0	1571	580	199	1876	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	7	0	0	0	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.25	0.00	0.37	0.00	0.31	0.17	0.06	0.37	0.00
Intersection LOS	C											
Intersection V/C	0.785											

Intersection Level Of Service Report
Intersection 3: SR-57 NB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.729

Intersection Setup

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	1104	0	467	0	0	0	0	1695	716	0	970	425
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1104	0	467	0	0	0	0	1695	716	0	970	425
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	276	0	117	0	0	0	0	424	179	0	243	0
Total Analysis Volume [veh/h]	1104	0	467	0	0	0	0	1695	716	0	970	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Unsigna
Signal Group	3	0	0	0	0	0	5	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.32	0.00	0.27	0.00	0.00	0.00	0.00	0.35	0.35	0.00	0.19	0.00
Intersection LOS	C											
Intersection V/C	0.729											

Intersection Level Of Service Report
Intersection 4: Randolph Avenue at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.529

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Base Volume Input [veh/h]	102	77	183	56	38	80	89	701	128	160	849	26
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	102	77	183	56	38	80	89	701	128	160	849	26
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	19	46	14	10	20	22	175	32	40	212	7
Total Analysis Volume [veh/h]	102	77	183	56	38	80	89	701	128	160	849	26
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.05	0.11	0.03	0.07	0.07	0.05	0.24	0.24	0.09	0.25	0.02
Intersection LOS	A											
Intersection V/C	0.529											

Intersection Level Of Service Report
Intersection 5: State College Boulevard at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.729

Intersection Setup

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Base Volume Input [veh/h]	130	324	183	287	614	506	306	783	171	171	752	257
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	130	324	183	287	614	506	306	783	171	171	752	257
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	81	46	72	154	127	77	196	43	43	188	64
Total Analysis Volume [veh/h]	130	324	183	287	614	506	306	783	171	171	752	257
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.10	0.11	0.08	0.33	0.33	0.09	0.23	0.10	0.05	0.22	0.15
Intersection LOS	C											
Intersection V/C	0.729											

Intersection Level Of Service Report
Intersection 6: S Associated Road at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.559

Intersection Setup

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Base Volume Input [veh/h]	341	20	166	12	22	16	10	814	353	148	806	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	341	20	166	12	22	16	10	814	353	148	806	14
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	85	5	42	3	6	4	3	204	88	37	202	4
Total Analysis Volume [veh/h]	341	20	166	12	22	16	10	814	353	148	806	14
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	8	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups			1,8									
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.01	0.05	0.01	0.02	0.02	0.01	0.34	0.34	0.04	0.24	0.24
Intersection LOS	A											
Intersection V/C	0.559											

Intersection Level Of Service Report
Intersection 7: Randolph Avenue at Madison Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.302

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Base Volume Input [veh/h]	22	291	115	72	276	24	38	11	60	83	4	59
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	22	291	115	72	276	24	38	11	60	83	4	59
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	73	29	18	69	6	10	3	15	21	1	15
Total Analysis Volume [veh/h]	22	291	115	72	276	24	38	11	60	83	4	59
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.12	0.12	0.04	0.09	0.09	0.02	0.04	0.04	0.05	0.04	0.04
Intersection LOS	A											
Intersection V/C	0.302											

Intersection Level Of Service Report
Intersection 8: Randolph Avenue at Brea Mall

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.493

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Base Volume Input [veh/h]	23	352	431	43	320	22	25	15	27	395	6	78
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	352	431	43	320	22	25	15	27	395	6	78
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	88	108	11	80	6	6	4	7	99	2	20
Total Analysis Volume [veh/h]	23	352	431	43	320	22	25	15	27	395	6	78
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.23	0.23	0.03	0.10	0.10	0.01	0.02	0.02	0.12	0.19	0.19
Intersection LOS	A											
Intersection V/C	0.493											

Intersection Level Of Service Report
Intersection 9: Brea Mall South at State College Boulevard

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.621

Intersection Setup

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Base Volume Input [veh/h]	175	32	94	62	28	529	677	407	30	89	642	36
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	175	32	94	62	28	529	677	407	30	89	642	36
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	44	8	24	16	7	132	169	102	8	22	161	9
Total Analysis Volume [veh/h]	175	32	94	62	28	529	677	407	30	89	642	36
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	4	5	2	0	1	6	0
Auxiliary Signal Groups						4,5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.06	0.06	0.04	0.02	0.11	0.20	0.13	0.13	0.05	0.20	0.20
Intersection LOS	B											
Intersection V/C	0.621											

Intersection Level Of Service Report
Intersection 10: Harbor Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.730

Intersection Setup

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	357	800	192	234	827	303	353	1216	283	350	1314	220
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	357	800	192	234	827	303	353	1216	283	350	1314	220
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	89	200	48	59	207	76	88	304	71	88	329	55
Total Analysis Volume [veh/h]	357	800	192	234	827	303	353	1216	283	350	1314	220
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.16	0.11	0.07	0.16	0.18	0.10	0.29	0.29	0.10	0.26	0.13
Intersection LOS	C											
Intersection V/C	0.730											

Intersection Level Of Service Report
Intersection 11: Puente Street at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.536

Intersection Setup

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	27	31	97	164	44	128	82	1392	37	80	1451	189
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	27	31	97	164	44	128	82	1392	37	80	1451	189
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	8	24	41	11	32	21	348	9	20	363	47
Total Analysis Volume [veh/h]	27	31	97	164	44	128	82	1392	37	80	1451	189
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.02	0.06	0.10	0.01	0.08	0.05	0.28	0.28	0.05	0.28	0.11
Intersection LOS	A											
Intersection V/C	0.536											

Intersection Level Of Service Report
Intersection 12: Brea Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.843

Intersection Setup

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	437	574	287	467	933	253	274	1440	288	367	1400	414
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	437	574	287	467	933	253	274	1440	288	367	1400	414
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	109	144	72	117	233	63	69	360	72	92	350	104
Total Analysis Volume [veh/h]	437	574	287	467	933	253	274	1440	288	367	1400	414
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.11	0.17	0.14	0.27	0.15	0.08	0.28	0.17	0.11	0.27	0.24
Intersection LOS	D											
Intersection V/C	0.843											

Intersection Level Of Service Report
Intersection 13: Randolph Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.857

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	102	47	199	420	86	299	322	1626	65	142	1880	473
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	102	47	199	420	86	299	322	1626	65	142	1880	473
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	12	50	105	22	75	81	407	16	36	470	118
Total Analysis Volume [veh/h]	102	47	199	420	86	299	322	1626	65	142	1880	473
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

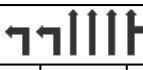
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.07	0.07	0.12	0.23	0.23	0.09	0.33	0.33	0.08	0.37	0.28
Intersection LOS	D											
Intersection V/C	0.857											

Intersection Level Of Service Report
Intersection 14: State College Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.185

Intersection Setup

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	326	554	607	595	421	186	139	1674	228	684	2074	973
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	326	554	607	595	421	186	139	1674	228	684	2074	973
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	82	139	152	149	105	47	35	419	57	171	519	243
Total Analysis Volume [veh/h]	326	554	607	595	421	186	139	1674	228	684	2074	973
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.16	0.36	0.30	0.18	0.18	0.04	0.28	0.28	0.20	0.41	0.27
Intersection LOS	F											
Intersection V/C	1.185											

Intersection Level Of Service Report
Intersection 15: SR-57 SB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.862

Intersection Setup

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	0	0	0	555	0	777	0	2000	1183	0	2807	349
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	555	0	777	0	2000	1183	0	2807	349
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	139	0	194	0	500	296	0	702	87
Total Analysis Volume [veh/h]	0	0	0	555	0	777	0	2000	1183	0	2807	349
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	7	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.16	0.00	0.26	0.00	0.39	0.00	0.00	0.55	0.00
Intersection LOS	D											
Intersection V/C	0.862											

Intersection Level Of Service Report
Intersection 16: SR-57 NB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.813

Intersection Setup

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	1493	73	606	0	0	257	236	1976	591	0	2033	36
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1493	73	606	0	0	257	236	1976	591	0	2033	36
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	373	18	152	0	0	64	59	494	148	0	508	9
Total Analysis Volume [veh/h]	1493	73	606	0	0	257	236	1976	591	0	2033	36
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Overlap	Protecte	Permiss	Unsigna	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	0	5	5	2	0	0	6	0
Auxiliary Signal Groups						5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.29	0.32	0.32	0.00	0.00	0.00	0.14	0.39	0.00	0.00	0.30	0.30
Intersection LOS	D											
Intersection V/C	0.813											

Intersection Level Of Service Report
Intersection 17: Associated Road at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.774

Intersection Setup

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	248	186	115	313	238	193	241	1897	252	152	1673	217
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	248	186	115	313	238	193	241	1897	252	152	1673	217
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	62	47	29	78	60	48	60	474	63	38	418	54
Total Analysis Volume [veh/h]	248	186	115	313	238	193	241	1897	252	152	1673	217
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.09	0.09	0.09	0.14	0.11	0.14	0.42	0.42	0.09	0.28	0.28
Intersection LOS	C											
Intersection V/C	0.774											

Intersection Level Of Service Report
Intersection 18: Castlegate Lane/Placentia Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.732

Intersection Setup

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	179	18	244	27	11	12	25	2031	299	212	1951	48
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	179	18	244	27	11	12	25	2031	299	212	1951	48
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	45	5	61	7	3	3	6	508	75	53	488	12
Total Analysis Volume [veh/h]	179	18	244	27	11	12	25	2031	299	212	1951	48
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.06	0.14	0.02	0.01	0.01	0.01	0.40	0.18	0.12	0.39	0.39
Intersection LOS	C											
Intersection V/C	0.732											

APPENDIX C-III

YEAR 2026 PLUS PROJECT TRAFFIC CONDITIONS

Brea Mall Expansion, Brea

Vistro File: N:\...\4099 ICU Network.vistro
Report File: N:\...\AM 2026+P.pdf

Scenario 7 AM 2026+P
4/12/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State College Boulevard at Lambert Road	Signalized	ICU 1	WB Thru	0.788	-	C
2	SR-57 SB Ramps at Lambert Road	Signalized	ICU 1	WB Thru	0.812	-	D
3	SR-57 NB Ramps at Lambert Road	Signalized	ICU 1	EB Thru	0.869	-	D
4	Randolph Avenue at Birch Street	Signalized	ICU 1	EB Thru	0.390	-	A
5	State College Boulevard at Birch Street	Signalized	ICU 1	SB Thru	0.611	-	B
6	S Associated Road at Birch Street	Signalized	ICU 1	EB Right	0.664	-	B
7	Randolph Avenue at Madison Way	Signalized	ICU 1	NB Right	0.148	-	A
8	Randolph Avenue at Brea Mall	Signalized	ICU 1	NB Right	0.198	-	A
9	Brea Mall South at State College Boulevard	Signalized	ICU 1	WB Right	0.236	-	A
10	Harbor Boulevard at Imperial Highway	Signalized	ICU 1	EB Thru	0.842	-	D
11	Puente Street at Imperial Highway	Signalized	ICU 1	EB Thru	0.659	-	B
12	Brea Boulevard at Imperial Highway	Signalized	ICU 1	WB Thru	0.870	-	D
13	Randolph Avenue at Imperial Highway	Signalized	ICU 1	WB Thru	0.512	-	A
14	State College Boulevard at Imperial Highway	Signalized	ICU 1	WB Thru	0.785	-	C
15	SR-57 SB Ramps at Imperial Highway	Signalized	ICU 1	WB Thru	0.668	-	B
16	SR-57 NB Ramps at Imperial Highway	Signalized	ICU 1	EB Thru	0.627	-	B
17	Associated Road at Imperial Highway	Signalized	ICU 1	EB Thru	0.753	-	C
18	Castlegate Lane/Placentia	Signalized	ICU 1	EB Thru	0.646		B

16	Avenue at Imperial Highway	Signalized	ICU 1	EB Thru	0.640	-	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: State College Boulevard at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.788

Intersection Setup

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	173	225	213	926	620	8	15	1400	212	486	1794	576
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	173	225	213	926	620	8	15	1400	212	486	1794	576
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	43	56	53	232	155	2	4	350	53	122	449	144
Total Analysis Volume [veh/h]	173	225	213	926	620	8	15	1400	212	486	1794	576
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.09	0.09	0.27	0.18	0.18	0.00	0.24	0.24	0.14	0.35	0.07
Intersection LOS	C											
Intersection V/C	0.788											

Intersection Level Of Service Report
Intersection 2: SR-57 SB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.812

Intersection Setup

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	0	0	0	1071	0	713	0	1909	635	246	2204	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	1071	0	713	0	1909	635	246	2204	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	268	0	178	0	477	159	62	551	0
Total Analysis Volume [veh/h]	0	0	0	1071	0	713	0	1909	635	246	2204	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	7	0	0	0	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.32	0.00	0.21	0.00	0.37	0.19	0.07	0.43	0.00
Intersection LOS	D											
Intersection V/C	0.812											

Intersection Level Of Service Report
Intersection 3: SR-57 NB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.869

Intersection Setup

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	1080	0	512	0	0	0	0	2557	413	0	1382	498
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1080	0	512	0	0	0	0	2557	413	0	1382	498
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	270	0	128	0	0	0	0	639	103	0	346	0
Total Analysis Volume [veh/h]	1080	0	512	0	0	0	0	2557	413	0	1382	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Unsigna
Signal Group	3	0	0	0	0	0	5	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.32	0.00	0.30	0.00	0.00	0.00	0.00	0.50	0.24	0.00	0.27	0.00
Intersection LOS	D											
Intersection V/C	0.869											

Intersection Level Of Service Report
Intersection 4: Randolph Avenue at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.390

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Base Volume Input [veh/h]	35	44	96	38	37	26	41	622	103	81	566	45
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	35	44	96	38	37	26	41	622	103	81	566	45
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	11	24	10	9	7	10	156	26	20	142	11
Total Analysis Volume [veh/h]	35	44	96	38	37	26	41	622	103	81	566	45
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.03	0.06	0.02	0.04	0.04	0.02	0.21	0.21	0.05	0.17	0.03
Intersection LOS	A											
Intersection V/C	0.390											

Intersection Level Of Service Report
Intersection 5: State College Boulevard at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.611

Intersection Setup

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Base Volume Input [veh/h]	80	161	104	696	874	232	115	546	50	84	597	304
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	161	104	696	874	232	115	546	50	84	597	304
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	40	26	174	219	58	29	137	13	21	149	76
Total Analysis Volume [veh/h]	80	161	104	696	874	232	115	546	50	84	597	304
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.05	0.06	0.20	0.33	0.33	0.03	0.16	0.03	0.02	0.18	0.18
Intersection LOS	B											
Intersection V/C	0.611											

Intersection Level Of Service Report
Intersection 6: S Associated Road at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.664

Intersection Setup

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Base Volume Input [veh/h]	255	6	323	57	29	9	5	993	335	357	807	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	255	6	323	57	29	9	5	993	335	357	807	11
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	64	2	81	14	7	2	1	248	84	89	202	3
Total Analysis Volume [veh/h]	255	6	323	57	29	9	5	993	335	357	807	11
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	8	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups			1,8									
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.00	0.09	0.03	0.02	0.02	0.00	0.39	0.39	0.11	0.24	0.24
Intersection LOS	B											
Intersection V/C	0.664											

Intersection Level Of Service Report
Intersection 7: Randolph Avenue at Madison Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.148

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Base Volume Input [veh/h]	26	154	8	6	141	17	35	2	59	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	154	8	6	141	17	35	2	59	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	39	2	2	35	4	9	1	15	0	0	0
Total Analysis Volume [veh/h]	26	154	8	6	141	17	35	2	59	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.05	0.05	0.00	0.05	0.05	0.02	0.04	0.04	0.00	0.00	0.00
Intersection LOS	A											
Intersection V/C	0.148											

Intersection Level Of Service Report
Intersection 8: Randolph Avenue at Brea Mall

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.198

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Base Volume Input [veh/h]	14	181	129	27	158	6	1	0	1	116	0	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	181	129	27	158	6	1	0	1	116	0	20
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	45	32	7	40	2	0	0	0	29	0	5
Total Analysis Volume [veh/h]	14	181	129	27	158	6	1	0	1	116	0	20
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.09	0.09	0.02	0.05	0.05	0.00	0.00	0.00	0.03	0.00	0.05
Intersection LOS	A											
Intersection V/C	0.198											

Intersection Level Of Service Report
Intersection 9: Brea Mall South at State College Boulevard

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.236

Intersection Setup

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Base Volume Input [veh/h]	33	9	16	17	6	67	149	269	16	28	381	26
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	33	9	16	17	6	67	149	269	16	28	381	26
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	2	4	4	2	17	37	67	4	7	95	7
Total Analysis Volume [veh/h]	33	9	16	17	6	67	149	269	16	28	381	26
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	4	5	2	0	1	6	0
Auxiliary Signal Groups						4,5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.01	0.01	0.00	0.00	0.04	0.08	0.08	0.02	0.12	0.12
Intersection LOS	A											
Intersection V/C	0.236											

Intersection Level Of Service Report
Intersection 10: Harbor Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.842

Intersection Setup

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	314	712	279	175	1318	318	289	1408	375	313	1259	266
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	314	712	279	175	1318	318	289	1408	375	313	1259	266
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	79	178	70	44	330	80	72	352	94	78	315	67
Total Analysis Volume [veh/h]	314	712	279	175	1318	318	289	1408	375	313	1259	266
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.14	0.16	0.05	0.26	0.19	0.09	0.35	0.35	0.09	0.25	0.16
Intersection LOS	D											
Intersection V/C	0.842											

Intersection Level Of Service Report
Intersection 11: Puente Street at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.659

Intersection Setup

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	61	118	161	141	87	148	234	1465	81	53	1497	175
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	61	118	161	141	87	148	234	1465	81	53	1497	175
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	30	40	35	22	37	59	366	20	13	374	44
Total Analysis Volume [veh/h]	61	118	161	141	87	148	234	1465	81	53	1497	175
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

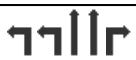
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.07	0.09	0.08	0.03	0.09	0.14	0.30	0.30	0.03	0.29	0.10
Intersection LOS	B											
Intersection V/C	0.659											

Intersection Level Of Service Report
Intersection 12: Brea Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.870

Intersection Setup

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	450	501	172	172	1032	209	166	1630	367	180	1708	116
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	450	501	172	172	1032	209	166	1630	367	180	1708	116
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	113	125	43	43	258	52	42	408	92	45	427	29
Total Analysis Volume [veh/h]	450	501	172	172	1032	209	166	1630	367	180	1708	116
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.10	0.10	0.05	0.30	0.12	0.05	0.32	0.22	0.05	0.33	0.07
Intersection LOS	D											
Intersection V/C	0.870											

Intersection Level Of Service Report
Intersection 13: Randolph Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.512

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	37	19	68	185	21	69	104	1683	26	41	1790	172
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	37	19	68	185	21	69	104	1683	26	41	1790	172
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	5	17	46	5	17	26	421	7	10	448	43
Total Analysis Volume [veh/h]	37	19	68	185	21	69	104	1683	26	41	1790	172
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.03	0.03	0.05	0.05	0.05	0.03	0.34	0.34	0.02	0.35	0.10
Intersection LOS	A											
Intersection V/C	0.512											

Intersection Level Of Service Report
Intersection 14: State College Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.785

Intersection Setup

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	119	178	429	126	407	28	35	1725	204	462	1859	196
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	119	178	429	126	407	28	35	1725	204	462	1859	196
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	30	45	107	32	102	7	9	431	51	116	465	49
Total Analysis Volume [veh/h]	119	178	429	126	407	28	35	1725	204	462	1859	196
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.05	0.25	0.06	0.13	0.13	0.01	0.28	0.28	0.14	0.36	0.05
Intersection LOS	C											
Intersection V/C	0.785											

Intersection Level Of Service Report
Intersection 15: SR-57 SB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.668

Intersection Setup

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	0	0	0	611	0	521	0	1581	749	0	2020	202
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	611	0	521	0	1581	749	0	2020	202
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	153	0	130	0	395	187	0	505	51
Total Analysis Volume [veh/h]	0	0	0	611	0	521	0	1581	749	0	2020	202
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	7	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.18	0.00	0.22	0.00	0.31	0.00	0.00	0.40	0.00
Intersection LOS	B											
Intersection V/C	0.668											

Intersection Level Of Service Report
Intersection 16: SR-57 NB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.627

Intersection Setup

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	1044	31	850	0	0	87	100	1463	570	0	1583	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1044	31	850	0	0	87	100	1463	570	0	1583	14
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	261	8	213	0	0	22	25	366	143	0	396	4
Total Analysis Volume [veh/h]	1044	31	850	0	0	87	100	1463	570	0	1583	14
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Overlap	Protecte	Permiss	Unsigna	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	0	5	5	2	0	0	6	0
Auxiliary Signal Groups						5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.20	0.28	0.28	0.00	0.00	0.00	0.06	0.29	0.00	0.00	0.23	0.23
Intersection LOS	B											
Intersection V/C	0.627											

Intersection Level Of Service Report
Intersection 17: Associated Road at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.753

Intersection Setup

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	154	211	73	170	335	168	217	1962	106	93	1698	102
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	154	211	73	170	335	168	217	1962	106	93	1698	102
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	53	18	43	84	42	54	491	27	23	425	26
Total Analysis Volume [veh/h]	154	211	73	170	335	168	217	1962	106	93	1698	102
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.08	0.08	0.05	0.20	0.10	0.13	0.41	0.41	0.05	0.26	0.26
Intersection LOS	C											
Intersection V/C	0.753											

Intersection Level Of Service Report
Intersection 18: Castlegate Lane/Placentia Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.646

Intersection Setup

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	187	12	149	25	28	15	14	1931	373	178	1565	33
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	187	12	149	25	28	15	14	1931	373	178	1565	33
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	47	3	37	6	7	4	4	483	93	45	391	8
Total Analysis Volume [veh/h]	187	12	149	25	28	15	14	1931	373	178	1565	33
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.06	0.09	0.01	0.03	0.03	0.01	0.38	0.22	0.10	0.31	0.31
Intersection LOS	B											
Intersection V/C	0.646											

Brea Mall Expansion, Brea

Vistro File: N:\...\4099 ICU Network.vistro
Report File: N:\...\PM 2026+P.pdf

Scenario 8 PM 2026+P
4/12/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State College Boulevard at Lambert Road	Signalized	ICU 1	WB Right	0.792	-	C
2	SR-57 SB Ramps at Lambert Road	Signalized	ICU 1	WB Thru	0.674	-	B
3	SR-57 NB Ramps at Lambert Road	Signalized	ICU 1	EB Thru	0.572	-	A
4	Randolph Avenue at Birch Street	Signalized	ICU 1	WB Thru	0.614	-	B
5	State College Boulevard at Birch Street	Signalized	ICU 1	WB Right	0.788	-	C
6	S Associated Road at Birch Street	Signalized	ICU 1	WB Right	0.668	-	B
7	Randolph Avenue at Madison Way	Signalized	ICU 1	NB Thru	0.254	-	A
8	Randolph Avenue at Brea Mall	Signalized	ICU 1	NB Right	0.447	-	A
9	Brea Mall South at State College Boulevard	Signalized	ICU 1	EB Left	0.492	-	A
10	Harbor Boulevard at Imperial Highway	Signalized	ICU 1	WB Thru	0.874	-	D
11	Puente Street at Imperial Highway	Signalized	ICU 1	WB Thru	0.658	-	B
12	Brea Boulevard at Imperial Highway	Signalized	ICU 1	EB Thru	0.856	-	D
13	Randolph Avenue at Imperial Highway	Signalized	ICU 1	WB Thru	0.739	-	C
14	State College Boulevard at Imperial Highway	Signalized	ICU 1	WB Thru	0.948	-	E
15	SR-57 SB Ramps at Imperial Highway	Signalized	ICU 1	WB Thru	0.785	-	C
16	SR-57 NB Ramps at Imperial Highway	Signalized	ICU 1	WB Thru	0.768	-	C
17	Associated Road at Imperial Highway	Signalized	ICU 1	EB Thru	0.838	-	D
18	Castlegate Lane/Placentia	Signalized	ICU 1	WB Thru	0.754		C

16	Avenue at Imperial Highway	Signalized	ICU 1	WB Thru	0.734	-	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: State College Boulevard at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.792

Intersection Setup

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	326	617	323	587	415	16	40	1506	269	420	1200	741
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	326	617	323	587	415	16	40	1506	269	420	1200	741
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	82	154	81	147	104	4	10	377	67	105	300	185
Total Analysis Volume [veh/h]	326	617	323	587	415	16	40	1506	269	420	1200	741
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.18	0.18	0.17	0.13	0.13	0.01	0.26	0.26	0.12	0.24	0.26
Intersection LOS	C											
Intersection V/C	0.792											

Intersection Level Of Service Report
Intersection 2: SR-57 SB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.674

Intersection Setup

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	0	0	0	470	0	877	0	1481	857	257	1793	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	470	0	877	0	1481	857	257	1793	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	118	0	219	0	370	214	64	448	0
Total Analysis Volume [veh/h]	0	0	0	470	0	877	0	1481	857	257	1793	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	7	0	0	0	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.14	0.00	0.26	0.00	0.29	0.25	0.08	0.35	0.00
Intersection LOS	B											
Intersection V/C	0.674											

Intersection Level Of Service Report
Intersection 3: SR-57 NB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.572

Intersection Setup

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	693	0	301	0	0	0	0	1573	588	0	1174	539
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	693	0	301	0	0	0	0	1573	588	0	1174	539
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	173	0	75	0	0	0	0	393	147	0	294	0
Total Analysis Volume [veh/h]	693	0	301	0	0	0	0	1573	588	0	1174	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Unsigna
Signal Group	3	0	0	0	0	0	5	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.20	0.00	0.18	0.00	0.00	0.00	0.00	0.32	0.32	0.00	0.23	0.00
Intersection LOS	A											
Intersection V/C	0.572											

Intersection Level Of Service Report
Intersection 4: Randolph Avenue at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.614

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Base Volume Input [veh/h]	141	59	175	52	51	110	80	730	112	198	1154	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	141	59	175	52	51	110	80	730	112	198	1154	40
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	35	15	44	13	13	28	20	183	28	50	289	10
Total Analysis Volume [veh/h]	141	59	175	52	51	110	80	730	112	198	1154	40
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.03	0.10	0.03	0.09	0.09	0.05	0.25	0.25	0.12	0.34	0.02
Intersection LOS	B											
Intersection V/C	0.614											

Intersection Level Of Service Report
Intersection 5: State College Boulevard at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.788

Intersection Setup

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Base Volume Input [veh/h]	148	431	164	351	393	328	293	801	162	152	1025	673
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	148	431	164	351	393	328	293	801	162	152	1025	673
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	108	41	88	98	82	73	200	41	38	256	168
Total Analysis Volume [veh/h]	148	431	164	351	393	328	293	801	162	152	1025	673
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.13	0.10	0.10	0.21	0.21	0.09	0.24	0.10	0.04	0.30	0.40
Intersection LOS	C											
Intersection V/C	0.788											

Intersection Level Of Service Report
Intersection 6: S Associated Road at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.668

Intersection Setup

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Base Volume Input [veh/h]	500	33	355	11	20	9	16	934	314	295	1324	18
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	500	33	355	11	20	9	16	934	314	295	1324	18
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	125	8	89	3	5	2	4	234	79	74	331	5
Total Analysis Volume [veh/h]	500	33	355	11	20	9	16	934	314	295	1324	18
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	8	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups			1,8									
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.15	0.02	0.12	0.01	0.02	0.02	0.01	0.37	0.37	0.09	0.39	0.39
Intersection LOS	B											
Intersection V/C	0.668											

Intersection Level Of Service Report
Intersection 7: Randolph Avenue at Madison Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.254

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Base Volume Input [veh/h]	48	332	43	28	277	30	65	4	52	75	4	38
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	48	332	43	28	277	30	65	4	52	75	4	38
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	83	11	7	69	8	16	1	13	19	1	10
Total Analysis Volume [veh/h]	48	332	43	28	277	30	65	4	52	75	4	38
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.11	0.11	0.02	0.09	0.09	0.04	0.03	0.03	0.04	0.02	0.02
Intersection LOS	A											
Intersection V/C	0.254											

Intersection Level Of Service Report
Intersection 8: Randolph Avenue at Brea Mall

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.447

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Base Volume Input [veh/h]	17	338	414	54	373	20	18	3	12	314	3	56
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	338	414	54	373	20	18	3	12	314	3	56
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	85	104	14	93	5	5	1	3	79	1	14
Total Analysis Volume [veh/h]	17	338	414	54	373	20	18	3	12	314	3	56
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.22	0.22	0.03	0.12	0.12	0.01	0.01	0.01	0.09	0.15	0.15
Intersection LOS	A											
Intersection V/C	0.447											

Intersection Level Of Service Report
Intersection 9: Brea Mall South at State College Boulevard

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.492

Intersection Setup

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Base Volume Input [veh/h]	144	25	67	56	19	409	595	567	23	99	467	48
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	144	25	67	56	19	409	595	567	23	99	467	48
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	6	17	14	5	102	149	142	6	25	117	12
Total Analysis Volume [veh/h]	144	25	67	56	19	409	595	567	23	99	467	48
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	4	5	2	0	1	6	0
Auxiliary Signal Groups						4,5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.05	0.04	0.03	0.01	0.07	0.18	0.17	0.17	0.06	0.15	0.15
Intersection LOS	A											
Intersection V/C	0.492											

Intersection Level Of Service Report
Intersection 10: Harbor Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.874

Intersection Setup

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	443	1174	232	280	976	418	320	1309	298	450	1613	287
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	443	1174	232	280	976	418	320	1309	298	450	1613	287
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	111	294	58	70	244	105	80	327	75	113	403	72
Total Analysis Volume [veh/h]	443	1174	232	280	976	418	320	1309	298	450	1613	287
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.23	0.14	0.08	0.19	0.25	0.09	0.32	0.32	0.13	0.32	0.17
Intersection LOS	D											
Intersection V/C	0.874											

Intersection Level Of Service Report
Intersection 11: Puente Street at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.658

Intersection Setup

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	36	49	88	196	108	217	139	1640	38	109	1833	281
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	36	49	88	196	108	217	139	1640	38	109	1833	281
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	12	22	49	27	54	35	410	10	27	458	70
Total Analysis Volume [veh/h]	36	49	88	196	108	217	139	1640	38	109	1833	281
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

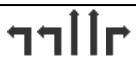
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.03	0.05	0.12	0.03	0.13	0.08	0.33	0.33	0.06	0.36	0.17
Intersection LOS	B											
Intersection V/C	0.658											

Intersection Level Of Service Report
Intersection 12: Brea Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.856

Intersection Setup

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	536	890	297	264	696	217	242	1874	433	260	1862	197
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	536	890	297	264	696	217	242	1874	433	260	1862	197
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	134	223	74	66	174	54	61	469	108	65	466	49
Total Analysis Volume [veh/h]	536	890	297	264	696	217	242	1874	433	260	1862	197
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.16	0.17	0.17	0.08	0.20	0.13	0.07	0.37	0.25	0.08	0.37	0.12
Intersection LOS	D											
Intersection V/C	0.856											

Intersection Level Of Service Report
Intersection 13: Randolph Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.739

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	58	39	69	352	30	239	320	1807	45	73	2051	368
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	58	39	69	352	30	239	320	1807	45	73	2051	368
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	10	17	88	8	60	80	452	11	18	513	92
Total Analysis Volume [veh/h]	58	39	69	352	30	239	320	1807	45	73	2051	368
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.03	0.03	0.10	0.16	0.16	0.09	0.36	0.36	0.04	0.40	0.22
Intersection LOS	C											
Intersection V/C	0.739											

Intersection Level Of Service Report
Intersection 14: State College Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.948

Intersection Setup

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	391	625	370	463	323	98	112	1991	116	474	2019	574
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	391	625	370	463	323	98	112	1991	116	474	2019	574
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	98	156	93	116	81	25	28	498	29	119	505	144
Total Analysis Volume [veh/h]	391	625	370	463	323	98	112	1991	116	474	2019	574
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.12	0.18	0.22	0.23	0.12	0.12	0.03	0.31	0.31	0.14	0.40	0.11
Intersection LOS	E											
Intersection V/C	0.948											

Intersection Level Of Service Report
Intersection 15: SR-57 SB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.785

Intersection Setup

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	0	0	0	687	0	571	0	1800	1043	0	2492	417
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	687	0	571	0	1800	1043	0	2492	417
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	172	0	143	0	450	261	0	623	104
Total Analysis Volume [veh/h]	0	0	0	687	0	571	0	1800	1043	0	2492	417
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	7	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.20	0.00	0.25	0.00	0.35	0.00	0.00	0.49	0.00
Intersection LOS	C											
Intersection V/C	0.785											

Intersection Level Of Service Report
Intersection 16: SR-57 NB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.768

Intersection Setup

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	1052	64	453	0	0	193	183	1936	385	0	2546	38
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1052	64	453	0	0	193	183	1936	385	0	2546	38
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	263	16	113	0	0	48	46	484	96	0	637	10
Total Analysis Volume [veh/h]	1052	64	453	0	0	193	183	1936	385	0	2546	38
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Overlap	Protecte	Permiss	Unsigna	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	0	5	5	2	0	0	6	0
Auxiliary Signal Groups						5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.21	0.23	0.23	0.00	0.00	0.00	0.11	0.38	0.00	0.00	0.38	0.38
Intersection LOS	C											
Intersection V/C	0.768											

Intersection Level Of Service Report
Intersection 17: Associated Road at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.838

Intersection Setup

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	225	262	86	297	353	264	280	1944	146	178	1846	191
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	225	262	86	297	353	264	280	1944	146	178	1846	191
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	56	66	22	74	88	66	70	486	37	45	462	48
Total Analysis Volume [veh/h]	225	262	86	297	353	264	280	1944	146	178	1846	191
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.10	0.10	0.09	0.21	0.16	0.16	0.41	0.41	0.10	0.30	0.30
Intersection LOS	D											
Intersection V/C	0.838											

Intersection Level Of Service Report
Intersection 18: Castlegate Lane/Placentia Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.754

Intersection Setup

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	263	48	272	26	23	15	19	1951	291	237	2015	58
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	263	48	272	26	23	15	19	1951	291	237	2015	58
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	66	12	68	7	6	4	5	488	73	59	504	15
Total Analysis Volume [veh/h]	263	48	272	26	23	15	19	1951	291	237	2015	58
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.09	0.16	0.02	0.02	0.02	0.01	0.38	0.17	0.14	0.41	0.41
Intersection LOS	C											
Intersection V/C	0.754											

Brea Mall Expansion, Brea

Vistro File: N:\...\4099 ICU Network.vistro
Report File: N:\...\Sat 2026+P.pdf

Scenario 9 Sat MD 2026+P
4/12/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State College Boulevard at Lambert Road	Signalized	ICU 1	WB Thru	0.785	-	C
2	SR-57 SB Ramps at Lambert Road	Signalized	ICU 1	WB Thru	0.786	-	C
3	SR-57 NB Ramps at Lambert Road	Signalized	ICU 1	EB Thru	0.731	-	C
4	Randolph Avenue at Birch Street	Signalized	ICU 1	WB Thru	0.532	-	A
5	State College Boulevard at Birch Street	Signalized	ICU 1	SB Thru	0.731	-	C
6	S Associated Road at Birch Street	Signalized	ICU 1	EB Thru	0.561	-	A
7	Randolph Avenue at Madison Way	Signalized	ICU 1	NB Thru	0.307	-	A
8	Randolph Avenue at Brea Mall	Signalized	ICU 1	NB Thru	0.517	-	A
9	Brea Mall South at State College Boulevard	Signalized	ICU 1	EB Left	0.671	-	B
10	Harbor Boulevard at Imperial Highway	Signalized	ICU 1	EB Thru	0.731	-	C
11	Puente Street at Imperial Highway	Signalized	ICU 1	WB Thru	0.543	-	A
12	Brea Boulevard at Imperial Highway	Signalized	ICU 1	EB Thru	0.851	-	D
13	Randolph Avenue at Imperial Highway	Signalized	ICU 1	WB Thru	0.895	-	D
14	State College Boulevard at Imperial Highway	Signalized	ICU 1	WB Thru	1.219	-	F
15	SR-57 SB Ramps at Imperial Highway	Signalized	ICU 1	WB Thru	0.869	-	D
16	SR-57 NB Ramps at Imperial Highway	Signalized	ICU 1	EB Thru	0.818	-	D
17	Associated Road at Imperial Highway	Signalized	ICU 1	EB Right	0.782	-	C
18	Castlegate Lane/Placentia	Signalized	ICU 1	EB Thru	0.736		C

16	Avenue at Imperial Highway	Signalized	ICU 1	EB Thru	0.730	-	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: State College Boulevard at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.785

Intersection Setup

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	139	280	398	547	389	5	19	1230	276	747	1631	751
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	139	280	398	547	389	5	19	1230	276	747	1631	751
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	35	70	100	137	97	1	5	308	69	187	408	188
Total Analysis Volume [veh/h]	139	280	398	547	389	5	19	1230	276	747	1631	751
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.13	0.13	0.16	0.12	0.12	0.01	0.22	0.22	0.22	0.32	0.28
Intersection LOS	C											
Intersection V/C	0.785											

Intersection Level Of Service Report
Intersection 2: SR-57 SB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.786

Intersection Setup

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	0	0	0	837	0	1249	0	1580	580	199	1877	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	837	0	1249	0	1580	580	199	1877	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	209	0	312	0	395	145	50	469	0
Total Analysis Volume [veh/h]	0	0	0	837	0	1249	0	1580	580	199	1877	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	7	0	0	0	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.25	0.00	0.37	0.00	0.31	0.17	0.06	0.37	0.00
Intersection LOS	C											
Intersection V/C	0.786											

Intersection Level Of Service Report
Intersection 3: SR-57 NB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.731

Intersection Setup

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	1104	0	467	0	0	0	0	1699	722	0	971	425
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1104	0	467	0	0	0	0	1699	722	0	971	425
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	276	0	117	0	0	0	0	425	181	0	243	0
Total Analysis Volume [veh/h]	1104	0	467	0	0	0	0	1699	722	0	971	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Unsigna
Signal Group	3	0	0	0	0	0	5	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.32	0.00	0.27	0.00	0.00	0.00	0.00	0.36	0.36	0.00	0.19	0.00
Intersection LOS	C											
Intersection V/C	0.731											

Intersection Level Of Service Report
Intersection 4: Randolph Avenue at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.532

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Base Volume Input [veh/h]	115	78	185	56	39	80	89	701	134	161	849	26
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	115	78	185	56	39	80	89	701	134	161	849	26
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	29	20	46	14	10	20	22	175	34	40	212	7
Total Analysis Volume [veh/h]	115	78	185	56	39	80	89	701	134	161	849	26
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

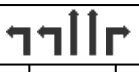
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.05	0.11	0.03	0.07	0.07	0.05	0.25	0.25	0.09	0.25	0.02
Intersection LOS	A											
Intersection V/C	0.532											

Intersection Level Of Service Report
Intersection 5: State College Boulevard at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.731

Intersection Setup

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Base Volume Input [veh/h]	130	337	188	287	620	506	306	785	171	173	753	257
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	130	337	188	287	620	506	306	785	171	173	753	257
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	84	47	72	155	127	77	196	43	43	188	64
Total Analysis Volume [veh/h]	130	337	188	287	620	506	306	785	171	173	753	257
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.10	0.11	0.08	0.33	0.33	0.09	0.23	0.10	0.05	0.22	0.15
Intersection LOS	C											
Intersection V/C	0.731											

Intersection Level Of Service Report
Intersection 6: S Associated Road at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.561

Intersection Setup

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Base Volume Input [veh/h]	341	20	166	12	22	16	10	820	353	148	810	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	341	20	166	12	22	16	10	820	353	148	810	14
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	85	5	42	3	6	4	3	205	88	37	203	4
Total Analysis Volume [veh/h]	341	20	166	12	22	16	10	820	353	148	810	14
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	8	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups			1,8									
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.01	0.05	0.01	0.02	0.02	0.01	0.35	0.35	0.04	0.24	0.24
Intersection LOS	A											
Intersection V/C	0.561											

Intersection Level Of Service Report
Intersection 7: Randolph Avenue at Madison Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.307

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Base Volume Input [veh/h]	22	306	115	72	284	24	38	11	60	83	4	59
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	22	306	115	72	284	24	38	11	60	83	4	59
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	77	29	18	71	6	10	3	15	21	1	15
Total Analysis Volume [veh/h]	22	306	115	72	284	24	38	11	60	83	4	59
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.12	0.12	0.04	0.09	0.09	0.02	0.04	0.04	0.05	0.04	0.04
Intersection LOS	A											
Intersection V/C	0.307											

Intersection Level Of Service Report
Intersection 8: Randolph Avenue at Brea Mall

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.517

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Base Volume Input [veh/h]	23	349	479	52	319	22	25	15	27	474	6	96
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	349	479	52	319	22	25	15	27	474	6	96
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	87	120	13	80	6	6	4	7	119	2	24
Total Analysis Volume [veh/h]	23	349	479	52	319	22	25	15	27	474	6	96
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.24	0.24	0.03	0.10	0.10	0.01	0.02	0.02	0.14	0.23	0.23
Intersection LOS	A											
Intersection V/C	0.517											

Intersection Level Of Service Report
Intersection 9: Brea Mall South at State College Boulevard

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.671

Intersection Setup

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Base Volume Input [veh/h]	175	32	94	85	28	610	709	402	30	89	641	45
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	175	32	94	85	28	610	709	402	30	89	641	45
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	44	8	24	21	7	153	177	101	8	22	160	11
Total Analysis Volume [veh/h]	175	32	94	85	28	610	709	402	30	89	641	45
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	4	5	2	0	1	6	0
Auxiliary Signal Groups						4,5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.06	0.06	0.05	0.02	0.15	0.21	0.13	0.13	0.05	0.20	0.20
Intersection LOS	B											
Intersection V/C	0.671											

Intersection Level Of Service Report
Intersection 10: Harbor Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.731

Intersection Setup

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	357	800	192	236	827	303	353	1223	283	350	1331	225
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	357	800	192	236	827	303	353	1223	283	350	1331	225
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	89	200	48	59	207	76	88	306	71	88	333	56
Total Analysis Volume [veh/h]	357	800	192	236	827	303	353	1223	283	350	1331	225
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.16	0.11	0.07	0.16	0.18	0.10	0.30	0.30	0.10	0.26	0.13
Intersection LOS	C											
Intersection V/C	0.731											

Intersection Level Of Service Report
Intersection 11: Puente Street at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.543

Intersection Setup

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	27	31	99	166	44	128	82	1402	37	84	1474	195
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	27	31	99	166	44	128	82	1402	37	84	1474	195
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	8	25	42	11	32	21	351	9	21	369	49
Total Analysis Volume [veh/h]	27	31	99	166	44	128	82	1402	37	84	1474	195
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.02	0.06	0.10	0.01	0.08	0.05	0.28	0.28	0.05	0.29	0.11
Intersection LOS	A											
Intersection V/C	0.543											

Intersection Level Of Service Report
Intersection 12: Brea Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.851

Intersection Setup

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	437	574	294	467	933	253	274	1454	288	385	1433	414
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	437	574	294	467	933	253	274	1454	288	385	1433	414
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	109	144	74	117	233	63	69	364	72	96	358	104
Total Analysis Volume [veh/h]	437	574	294	467	933	253	274	1454	288	385	1433	414
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.11	0.17	0.14	0.27	0.15	0.08	0.29	0.17	0.11	0.28	0.24
Intersection LOS	D											
Intersection V/C	0.851											

Intersection Level Of Service Report
Intersection 13: Randolph Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.895

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	102	47	199	446	86	352	344	1626	65	142	1880	496
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	102	47	199	446	86	352	344	1626	65	142	1880	496
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	12	50	112	22	88	86	407	16	36	470	124
Total Analysis Volume [veh/h]	102	47	199	446	86	352	344	1626	65	142	1880	496
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

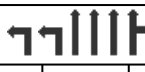
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.07	0.07	0.13	0.26	0.26	0.10	0.33	0.33	0.08	0.37	0.29
Intersection LOS	D											
Intersection V/C	0.895											

Intersection Level Of Service Report
Intersection 14: State College Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.219

Intersection Setup

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	331	564	607	655	443	186	139	1695	233	684	2092	991
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	331	564	607	655	443	186	139	1695	233	684	2092	991
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	83	141	152	164	111	47	35	424	58	171	523	248
Total Analysis Volume [veh/h]	331	564	607	655	443	186	139	1695	233	684	2092	991
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.17	0.36	0.33	0.19	0.19	0.04	0.28	0.28	0.20	0.41	0.26
Intersection LOS	F											
Intersection V/C	1.219											

Intersection Level Of Service Report
Intersection 15: SR-57 SB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.869

Intersection Setup

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	0	0	0	555	0	782	0	2051	1213	0	2838	349
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	555	0	782	0	2051	1213	0	2838	349
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	139	0	196	0	513	303	0	710	87
Total Analysis Volume [veh/h]	0	0	0	555	0	782	0	2051	1213	0	2838	349
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	7	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.16	0.00	0.26	0.00	0.40	0.00	0.00	0.56	0.00
Intersection LOS	D											
Intersection V/C	0.869											

Intersection Level Of Service Report
Intersection 16: SR-57 NB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.818

Intersection Setup

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	1506	73	606	0	0	258	237	2014	603	0	2051	36
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1506	73	606	0	0	258	237	2014	603	0	2051	36
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	377	18	152	0	0	65	59	504	151	0	513	9
Total Analysis Volume [veh/h]	1506	73	606	0	0	258	237	2014	603	0	2051	36
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Overlap	Protecte	Permiss	Unsigna	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	0	5	5	2	0	0	6	0
Auxiliary Signal Groups						5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.30	0.32	0.32	0.00	0.00	0.00	0.14	0.39	0.00	0.00	0.31	0.31
Intersection LOS	D											
Intersection V/C	0.818											

Intersection Level Of Service Report
Intersection 17: Associated Road at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.782

Intersection Setup

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	250	186	115	313	238	194	244	1929	257	152	1688	217
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	250	186	115	313	238	194	244	1929	257	152	1688	217
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	63	47	29	78	60	49	61	482	64	38	422	54
Total Analysis Volume [veh/h]	250	186	115	313	238	194	244	1929	257	152	1688	217
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.09	0.09	0.09	0.14	0.11	0.14	0.43	0.43	0.09	0.28	0.28
Intersection LOS	C											
Intersection V/C	0.782											

Intersection Level Of Service Report
Intersection 18: Castlegate Lane/Placentia Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.736

Intersection Setup

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	184	18	244	27	11	12	25	2050	312	212	1960	48
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	184	18	244	27	11	12	25	2050	312	212	1960	48
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	46	5	61	7	3	3	6	513	78	53	490	12
Total Analysis Volume [veh/h]	184	18	244	27	11	12	25	2050	312	212	1960	48
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.06	0.14	0.02	0.01	0.01	0.01	0.40	0.18	0.12	0.39	0.39
Intersection LOS	C											
Intersection V/C	0.736											

APPENDIX C-IV

YEAR 2026 PLUS PROJECT WITH IMPROVEMENTS TRAFFIC CONDITIONS

Brea Mall Expansion, Brea

Vistro File: N:\...\4099 ICU Network.vistro
Report File: N:\...\AM 2026+P-MIT.pdf

Scenario 21 [MIT] AM 2026+P
4/13/2022

Intersection Analysis Summary

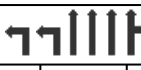
ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
14	State College Boulevard at Imperial Highway	Signalized	ICU 1	WB Thru	0.759	-	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 14: State College Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.759

Intersection Setup

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	119	178	429	126	407	28	35	1725	204	462	1859	196
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	119	178	429	126	407	28	35	1725	204	462	1859	196
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	30	45	107	32	102	7	9	431	51	116	465	49
Total Analysis Volume [veh/h]	119	178	429	126	407	28	35	1725	204	462	1859	196
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.05	0.25	0.04	0.12	0.02	0.01	0.28	0.28	0.14	0.36	0.08
Intersection LOS	C											
Intersection V/C	0.759											

Brea Mall Expansion, Brea

Vistro File: N:\...\4099 ICU Network.vistro
Report File: N:\...\PM 2026+P-MIT.pdf

Scenario 20 [MIT] PM 2026+P
4/13/2022

Intersection Analysis Summary

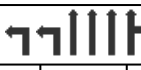
ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
14	State College Boulevard at Imperial Highway	Signalized	ICU 1	WB Thru	0.853	-	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 14: State College Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.853

Intersection Setup

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	391	625	370	463	323	98	112	1991	116	474	2019	574
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	391	625	370	463	323	98	112	1991	116	474	2019	574
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	98	156	93	116	81	25	28	498	29	119	505	144
Total Analysis Volume [veh/h]	391	625	370	463	323	98	112	1991	116	474	2019	574
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.12	0.18	0.22	0.14	0.10	0.06	0.03	0.31	0.31	0.14	0.40	0.20
Intersection LOS	D											
Intersection V/C	0.853											

Brea Mall Expansion, Brea

Vistro File: N:\...\4099 ICU Network.vistro
Report File: N:\...\Sat 2026+P-MIT.pdf
Scenario 19 [MIT] Sat MD 2026+P
4/13/2022

Intersection Analysis Summary

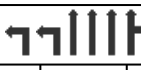
ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
14	State College Boulevard at Imperial Highway	Signalized	ICU 1	WB Thru	1.084	-	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 14: State College Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.084

Intersection Setup

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	331	564	607	655	443	186	139	1695	233	684	2092	991
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	331	564	607	655	443	186	139	1695	233	684	2092	991
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	83	141	152	164	111	47	35	424	58	171	523	248
Total Analysis Volume [veh/h]	331	564	607	655	443	186	139	1695	233	684	2092	991
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.17	0.36	0.19	0.13	0.11	0.04	0.28	0.28	0.20	0.41	0.39
Intersection LOS	F											
Intersection V/C	1.084											

APPENDIX C-V

YEAR 2045 TRAFFIC CONDITIONS

Brea Mall Expansion, Brea

Vistro File: N:\...\4099 ICU Network.vistro
Report File: N:\...\AM 2045.pdf

Scenario 10 AM 2045
4/12/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State College Boulevard at Lambert Road	Signalized	ICU 1	WB Thru	0.867	-	D
2	SR-57 SB Ramps at Lambert Road	Signalized	ICU 1	WB Thru	0.834	-	D
3	SR-57 NB Ramps at Lambert Road	Signalized	ICU 1	EB Thru	0.885	-	D
4	Randolph Avenue at Birch Street	Signalized	ICU 1	EB Right	0.430	-	A
5	State College Boulevard at Birch Street	Signalized	ICU 1	SB Thru	0.670	-	B
6	S Associated Road at Birch Street	Signalized	ICU 1	EB Thru	0.734	-	C
7	Randolph Avenue at Madison Way	Signalized	ICU 1	NB Thru	0.150	-	A
8	Randolph Avenue at Brea Mall	Signalized	ICU 1	NB Thru	0.148	-	A
9	Brea Mall South at State College Boulevard	Signalized	ICU 1	WB Thru	0.245	-	A
10	Harbor Boulevard at Imperial Highway	Signalized	ICU 1	EB Right	1.026	-	F
11	Puente Street at Imperial Highway	Signalized	ICU 1	WB Thru	0.772	-	C
12	Brea Boulevard at Imperial Highway	Signalized	ICU 1	SB Thru	0.947	-	E
13	Randolph Avenue at Imperial Highway	Signalized	ICU 1	WB Thru	0.515	-	A
14	State College Boulevard at Imperial Highway	Signalized	ICU 1	WB Thru	0.837	-	D
15	SR-57 SB Ramps at Imperial Highway	Signalized	ICU 1	WB Thru	0.719	-	C
16	SR-57 NB Ramps at Imperial Highway	Signalized	ICU 1	NB Thru	0.672	-	B
17	Associated Road at Imperial Highway	Signalized	ICU 1	EB Thru	0.832	-	D
18	Castlegate Lane/Placentia	Signalized	ICU 1	EB Thru	0.717		C

16	Avenue at Imperial Highway	Signalized	ICU 1	EB Thru	0.717	-	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: State College Boulevard at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.867

Intersection Setup

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	194	247	228	1011	688	9	16	1594	238	534	2035	627
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	194	247	228	1011	688	9	16	1594	238	534	2035	627
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	62	57	253	172	2	4	399	60	134	509	157
Total Analysis Volume [veh/h]	194	247	228	1011	688	9	16	1594	238	534	2035	627
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.09	0.09	0.30	0.21	0.21	0.00	0.27	0.27	0.16	0.40	0.07
Intersection LOS	D											
Intersection V/C	0.867											

Intersection Level Of Service Report
Intersection 2: SR-57 SB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.834

Intersection Setup

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	0	0	0	1084	0	725	0	1946	650	285	2284	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	1084	0	725	0	1946	650	285	2284	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	271	0	181	0	487	163	71	571	0
Total Analysis Volume [veh/h]	0	0	0	1084	0	725	0	1946	650	285	2284	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	7	0	0	0	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.32	0.00	0.21	0.00	0.38	0.19	0.08	0.45	0.00
Intersection LOS	D											
Intersection V/C	0.834											

Intersection Level Of Service Report
Intersection 3: SR-57 NB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.885

Intersection Setup

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	1104	0	534	0	0	0	0	2603	419	0	1456	530
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1104	0	534	0	0	0	0	2603	419	0	1456	530
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	276	0	134	0	0	0	0	651	105	0	364	0
Total Analysis Volume [veh/h]	1104	0	534	0	0	0	0	2603	419	0	1456	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Unsigna
Signal Group	3	0	0	0	0	0	5	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.32	0.00	0.31	0.00	0.00	0.00	0.00	0.51	0.25	0.00	0.29	0.00
Intersection LOS	D											
Intersection V/C	0.885											

Intersection Level Of Service Report
Intersection 4: Randolph Avenue at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.430

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Base Volume Input [veh/h]	26	44	98	86	38	37	43	656	99	84	597	61
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	44	98	86	38	37	43	656	99	84	597	61
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	11	25	22	10	9	11	164	25	21	149	15
Total Analysis Volume [veh/h]	26	44	98	86	38	37	43	656	99	84	597	61
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.03	0.06	0.05	0.04	0.04	0.03	0.22	0.22	0.05	0.18	0.04
Intersection LOS	A											
Intersection V/C	0.430											

Intersection Level Of Service Report
Intersection 5: State College Boulevard at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.670

Intersection Setup

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Base Volume Input [veh/h]	88	166	114	776	964	254	125	579	68	101	663	338
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	88	166	114	776	964	254	125	579	68	101	663	338
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	42	29	194	241	64	31	145	17	25	166	85
Total Analysis Volume [veh/h]	88	166	114	776	964	254	125	579	68	101	663	338
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.05	0.07	0.23	0.36	0.36	0.04	0.17	0.04	0.03	0.20	0.20
Intersection LOS	B											
Intersection V/C	0.670											

Intersection Level Of Service Report
Intersection 6: S Associated Road at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.734

Intersection Setup

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Base Volume Input [veh/h]	286	7	364	63	34	11	5	1098	374	405	894	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	286	7	364	63	34	11	5	1098	374	405	894	11
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	72	2	91	16	9	3	1	275	94	101	224	3
Total Analysis Volume [veh/h]	286	7	364	63	34	11	5	1098	374	405	894	11
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	8	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups			1,8									
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.00	0.10	0.04	0.03	0.03	0.00	0.43	0.43	0.12	0.27	0.27
Intersection LOS	C											
Intersection V/C	0.734											

Intersection Level Of Service Report
Intersection 7: Randolph Avenue at Madison Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.150

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Base Volume Input [veh/h]	28	146	9	6	137	18	36	3	62	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	28	146	9	6	137	18	36	3	62	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	37	2	2	34	5	9	1	16	0	0	0
Total Analysis Volume [veh/h]	28	146	9	6	137	18	36	3	62	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.05	0.05	0.00	0.05	0.05	0.02	0.04	0.04	0.00	0.00	0.00
Intersection LOS	A											
Intersection V/C	0.150											

Intersection Level Of Service Report
Intersection 8: Randolph Avenue at Brea Mall

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.148

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Base Volume Input [veh/h]	14	190	72	17	166	6	1	0	1	28	0	7
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	190	72	17	166	6	1	0	1	28	0	7
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	48	18	4	42	2	0	0	0	7	0	2
Total Analysis Volume [veh/h]	14	190	72	17	166	6	1	0	1	28	0	7
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.08	0.08	0.01	0.05	0.05	0.00	0.00	0.00	0.01	0.00	0.01
Intersection LOS	A											
Intersection V/C	0.148											

Intersection Level Of Service Report
Intersection 9: Brea Mall South at State College Boulevard

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.245

Intersection Setup

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Base Volume Input [veh/h]	34	9	17	3	6	28	84	284	17	30	512	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	34	9	17	3	6	28	84	284	17	30	512	15
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	2	4	1	2	7	21	71	4	8	128	4
Total Analysis Volume [veh/h]	34	9	17	3	6	28	84	284	17	30	512	15
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	4	5	2	0	1	6	0
Auxiliary Signal Groups						4,5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.01	0.00	0.00	0.00	0.02	0.09	0.09	0.02	0.16	0.16
Intersection LOS	A											
Intersection V/C	0.245											

Intersection Level Of Service Report
Intersection 10: Harbor Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.026

Intersection Setup

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	387	773	293	179	1484	334	303	1469	759	424	1315	275
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	387	773	293	179	1484	334	303	1469	759	424	1315	275
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	97	193	73	45	371	84	76	367	190	106	329	69
Total Analysis Volume [veh/h]	387	773	293	179	1484	334	303	1469	759	424	1315	275
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.15	0.17	0.05	0.29	0.20	0.09	0.44	0.44	0.12	0.26	0.16
Intersection LOS	F											
Intersection V/C	1.026											

Intersection Level Of Service Report
Intersection 11: Puente Street at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.772

Intersection Setup

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	64	124	166	295	121	263	246	1454	85	53	1559	193
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	64	124	166	295	121	263	246	1454	85	53	1559	193
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	31	42	74	30	66	62	364	21	13	390	48
Total Analysis Volume [veh/h]	64	124	166	295	121	263	246	1454	85	53	1559	193
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

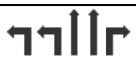
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.07	0.10	0.17	0.04	0.15	0.14	0.30	0.30	0.03	0.31	0.11
Intersection LOS	C											
Intersection V/C	0.772											

Intersection Level Of Service Report
Intersection 12: Brea Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.947

Intersection Setup

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	473	581	189	181	1222	228	177	1689	395	210	1767	122
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	473	581	189	181	1222	228	177	1689	395	210	1767	122
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	118	145	47	45	306	57	44	422	99	53	442	31
Total Analysis Volume [veh/h]	473	581	189	181	1222	228	177	1689	395	210	1767	122
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.14	0.11	0.11	0.05	0.36	0.13	0.05	0.33	0.23	0.06	0.35	0.07
Intersection LOS	E											
Intersection V/C	0.947											

Intersection Level Of Service Report
Intersection 13: Randolph Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.515

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	39	20	71	140	22	41	96	1742	27	43	1882	164
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	39	20	71	140	22	41	96	1742	27	43	1882	164
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	5	18	35	6	10	24	436	7	11	471	41
Total Analysis Volume [veh/h]	39	20	71	140	22	41	96	1742	27	43	1882	164
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

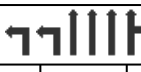
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.03	0.03	0.04	0.04	0.04	0.03	0.35	0.35	0.03	0.37	0.10
Intersection LOS	A											
Intersection V/C	0.515											

Intersection Level Of Service Report
Intersection 14: State College Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.837

Intersection Setup

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	121	168	479	127	487	33	37	1734	204	534	1939	153
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	121	168	479	127	487	33	37	1734	204	534	1939	153
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	30	42	120	32	122	8	9	434	51	134	485	38
Total Analysis Volume [veh/h]	121	168	479	127	487	33	37	1734	204	534	1939	153
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.05	0.28	0.06	0.15	0.15	0.01	0.29	0.29	0.16	0.38	0.03
Intersection LOS	D											
Intersection V/C	0.837											

Intersection Level Of Service Report
Intersection 15: SR-57 SB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.719

Intersection Setup

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	0	0	0	684	0	562	0	1697	805	0	2168	232
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	684	0	562	0	1697	805	0	2168	232
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	171	0	141	0	424	201	0	542	58
Total Analysis Volume [veh/h]	0	0	0	684	0	562	0	1697	805	0	2168	232
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	7	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.20	0.00	0.24	0.00	0.33	0.00	0.00	0.43	0.00
Intersection LOS	C											
Intersection V/C	0.719											

Intersection Level Of Service Report
Intersection 16: SR-57 NB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.672

Intersection Setup

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	1125	31	949	0	0	86	98	1521	627	0	1721	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1125	31	949	0	0	86	98	1521	627	0	1721	14
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	281	8	237	0	0	22	25	380	157	0	430	4
Total Analysis Volume [veh/h]	1125	31	949	0	0	86	98	1521	627	0	1721	14
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Overlap	Protecte	Permiss	Unsigna	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	0	5	5	2	0	0	6	0
Auxiliary Signal Groups						5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.22	0.31	0.31	0.00	0.00	0.00	0.06	0.30	0.00	0.00	0.26	0.26
Intersection LOS	B											
Intersection V/C	0.672											

Intersection Level Of Service Report
Intersection 17: Associated Road at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.832

Intersection Setup

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	168	241	94	190	382	183	237	2167	113	104	1792	112
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	168	241	94	190	382	183	237	2167	113	104	1792	112
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	42	60	24	48	96	46	59	542	28	26	448	28
Total Analysis Volume [veh/h]	168	241	94	190	382	183	237	2167	113	104	1792	112
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.10	0.10	0.06	0.22	0.11	0.14	0.45	0.45	0.06	0.28	0.28
Intersection LOS	D											
Intersection V/C	0.832											

Intersection Level Of Service Report
Intersection 18: Castlegate Lane/Placentia Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.717

Intersection Setup

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	191	14	167	28	33	16	14	2152	478	201	1740	37
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	191	14	167	28	33	16	14	2152	478	201	1740	37
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	48	4	42	7	8	4	4	538	120	50	435	9
Total Analysis Volume [veh/h]	191	14	167	28	33	16	14	2152	478	201	1740	37
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.06	0.10	0.02	0.03	0.03	0.01	0.42	0.28	0.12	0.35	0.35
Intersection LOS	C											
Intersection V/C	0.717											

Brea Mall Expansion, Brea

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Report File: N:\...\PM 2045.pdf

Scenario 11 PM 2045
4/12/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State College Boulevard at Lambert Road	Signalized	ICU 1	EB Thru	0.863	-	D
2	SR-57 SB Ramps at Lambert Road	Signalized	ICU 1	WB Thru	0.689	-	B
3	SR-57 NB Ramps at Lambert Road	Signalized	ICU 1	EB Right	0.588	-	A
4	Randolph Avenue at Birch Street	Signalized	ICU 1	WB Thru	0.643	-	B
5	State College Boulevard at Birch Street	Signalized	ICU 1	WB Right	0.860	-	D
6	S Associated Road at Birch Street	Signalized	ICU 1	WB Thru	0.740	-	C
7	Randolph Avenue at Madison Way	Signalized	ICU 1	NB Thru	0.268	-	A
8	Randolph Avenue at Brea Mall	Signalized	ICU 1	NB Thru	0.392	-	A
9	Brea Mall South at State College Boulevard	Signalized	ICU 1	EB Thru	0.491	-	A
10	Harbor Boulevard at Imperial Highway	Signalized	ICU 1	EB Thru	1.022	-	F
11	Puente Street at Imperial Highway	Signalized	ICU 1	WB Thru	0.704	-	C
12	Brea Boulevard at Imperial Highway	Signalized	ICU 1	EB Thru	0.879	-	D
13	Randolph Avenue at Imperial Highway	Signalized	ICU 1	WB Thru	0.734	-	C
14	State College Boulevard at Imperial Highway	Signalized	ICU 1	WB Thru	1.028	-	F
15	SR-57 SB Ramps at Imperial Highway	Signalized	ICU 1	WB Thru	0.836	-	D
16	SR-57 NB Ramps at Imperial Highway	Signalized	ICU 1	EB Thru	0.816	-	D
17	Associated Road at Imperial Highway	Signalized	ICU 1	EB Thru	0.935	-	E
18	Castlegate Lane/Placentia	Signalized	ICU 1	WB Right	0.842		D

16	Avenue at Imperial Highway	Signalized	ICU 1	WB Right	0.842	-	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: State College Boulevard at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.863

Intersection Setup

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	368	685	345	637	455	17	44	1694	302	443	1361	801
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	368	685	345	637	455	17	44	1694	302	443	1361	801
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	92	171	86	159	114	4	11	424	76	111	340	200
Total Analysis Volume [veh/h]	368	685	345	637	455	17	44	1694	302	443	1361	801
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.20	0.20	0.19	0.14	0.14	0.01	0.29	0.29	0.13	0.27	0.28
Intersection LOS	D											
Intersection V/C	0.863											

Intersection Level Of Service Report
Intersection 2: SR-57 SB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.689

Intersection Setup

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	0	0	0	497	0	888	0	1508	877	280	1832	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	497	0	888	0	1508	877	280	1832	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	124	0	222	0	377	219	70	458	0
Total Analysis Volume [veh/h]	0	0	0	497	0	888	0	1508	877	280	1832	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	7	0	0	0	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.15	0.00	0.26	0.00	0.30	0.26	0.08	0.36	0.00
Intersection LOS	B											
Intersection V/C	0.689											

Intersection Level Of Service Report
Intersection 3: SR-57 NB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.588

Intersection Setup

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	710	0	330	0	0	0	0	1637	600	0	1199	571
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	710	0	330	0	0	0	0	1637	600	0	1199	571
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	178	0	83	0	0	0	0	409	150	0	300	0
Total Analysis Volume [veh/h]	710	0	330	0	0	0	0	1637	600	0	1199	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Unsigna
Signal Group	3	0	0	0	0	0	5	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.21	0.00	0.19	0.00	0.00	0.00	0.00	0.33	0.33	0.00	0.24	0.00
Intersection LOS	A											
Intersection V/C	0.588											

Intersection Level Of Service Report
Intersection 4: Randolph Avenue at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.643

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Base Volume Input [veh/h]	143	75	186	55	53	112	93	770	103	206	1215	49
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	143	75	186	55	53	112	93	770	103	206	1215	49
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	19	47	14	13	28	23	193	26	52	304	12
Total Analysis Volume [veh/h]	143	75	186	55	53	112	93	770	103	206	1215	49
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.04	0.11	0.03	0.10	0.10	0.05	0.26	0.26	0.12	0.36	0.03
Intersection LOS	B											
Intersection V/C	0.643											

Intersection Level Of Service Report
Intersection 5: State College Boulevard at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.860

Intersection Setup

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Base Volume Input [veh/h]	157	468	182	393	415	363	320	892	182	165	1138	749
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	157	468	182	393	415	363	320	892	182	165	1138	749
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	117	46	98	104	91	80	223	46	41	285	187
Total Analysis Volume [veh/h]	157	468	182	393	415	363	320	892	182	165	1138	749
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.14	0.11	0.12	0.23	0.23	0.09	0.26	0.11	0.05	0.33	0.44
Intersection LOS	D											
Intersection V/C	0.860											

Intersection Level Of Service Report
Intersection 6: S Associated Road at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.740

Intersection Setup

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Base Volume Input [veh/h]	559	37	403	11	23	11	17	1039	349	332	1466	19
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	559	37	403	11	23	11	17	1039	349	332	1466	19
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	140	9	101	3	6	3	4	260	87	83	367	5
Total Analysis Volume [veh/h]	559	37	403	11	23	11	17	1039	349	332	1466	19
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	8	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups			1,8									
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.16	0.02	0.14	0.01	0.02	0.02	0.01	0.41	0.41	0.10	0.44	0.44
Intersection LOS	C											
Intersection V/C	0.740											

Intersection Level Of Service Report
Intersection 7: Randolph Avenue at Madison Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.268

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Base Volume Input [veh/h]	48	361	45	29	273	32	68	4	55	79	4	38
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	48	361	45	29	273	32	68	4	55	79	4	38
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	90	11	7	68	8	17	1	14	20	1	10
Total Analysis Volume [veh/h]	48	361	45	29	273	32	68	4	55	79	4	38
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.12	0.12	0.02	0.09	0.09	0.04	0.03	0.03	0.05	0.02	0.02
Intersection LOS	A											
Intersection V/C	0.268											

Intersection Level Of Service Report
Intersection 8: Randolph Avenue at Brea Mall

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.392

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Base Volume Input [veh/h]	17	367	338	39	392	21	18	3	12	288	3	48
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	367	338	39	392	21	18	3	12	288	3	48
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	92	85	10	98	5	5	1	3	72	1	12
Total Analysis Volume [veh/h]	17	367	338	39	392	21	18	3	12	288	3	48
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.21	0.21	0.02	0.12	0.12	0.01	0.01	0.01	0.08	0.13	0.13
Intersection LOS	A											
Intersection V/C	0.392											

Intersection Level Of Service Report
Intersection 9: Brea Mall South at State College Boulevard

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.491

Intersection Setup

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Base Volume Input [veh/h]	151	26	67	45	20	402	519	596	23	104	490	28
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	151	26	67	45	20	402	519	596	23	104	490	28
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	38	7	17	11	5	101	130	149	6	26	123	7
Total Analysis Volume [veh/h]	151	26	67	45	20	402	519	596	23	104	490	28
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	4	5	2	0	1	6	0
Auxiliary Signal Groups						4,5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.05	0.04	0.03	0.01	0.08	0.15	0.18	0.18	0.06	0.15	0.15
Intersection LOS	A											
Intersection V/C	0.491											

Intersection Level Of Service Report
Intersection 10: Harbor Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.022

Intersection Setup

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	786	1305	282	288	1020	439	336	1361	417	455	1692	299
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	786	1305	282	288	1020	439	336	1361	417	455	1692	299
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	197	326	71	72	255	110	84	340	104	114	423	75
Total Analysis Volume [veh/h]	786	1305	282	288	1020	439	336	1361	417	455	1692	299
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.23	0.26	0.17	0.08	0.20	0.26	0.10	0.35	0.35	0.13	0.33	0.18
Intersection LOS	F											
Intersection V/C	1.022											

Intersection Level Of Service Report
Intersection 11: Puente Street at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.704

Intersection Setup

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	38	51	89	236	113	228	146	1702	40	112	1921	399
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	38	51	89	236	113	228	146	1702	40	112	1921	399
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	13	22	59	28	57	37	426	10	28	480	100
Total Analysis Volume [veh/h]	38	51	89	236	113	228	146	1702	40	112	1921	399
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

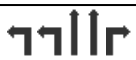
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.03	0.05	0.14	0.03	0.13	0.09	0.34	0.34	0.07	0.38	0.23
Intersection LOS	C											
Intersection V/C	0.704											

Intersection Level Of Service Report
Intersection 12: Brea Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.879

Intersection Setup

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	553	989	298	277	712	234	263	1927	455	270	1872	207
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	553	989	298	277	712	234	263	1927	455	270	1872	207
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	138	247	75	69	178	59	66	482	114	68	468	52
Total Analysis Volume [veh/h]	553	989	298	277	712	234	263	1927	455	270	1872	207
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.16	0.19	0.18	0.08	0.21	0.14	0.08	0.38	0.27	0.08	0.37	0.12
Intersection LOS	D											
Intersection V/C	0.879											

Intersection Level Of Service Report
Intersection 13: Randolph Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.734

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	61	41	72	350	32	230	270	1903	47	77	2114	356
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	61	41	72	350	32	230	270	1903	47	77	2114	356
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	10	18	88	8	58	68	476	12	19	529	89
Total Analysis Volume [veh/h]	61	41	72	350	32	230	270	1903	47	77	2114	356
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.03	0.03	0.10	0.15	0.15	0.08	0.38	0.38	0.05	0.41	0.21
Intersection LOS	C											
Intersection V/C	0.734											

Intersection Level Of Service Report
Intersection 14: State College Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.028

Intersection Setup

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	385	628	471	464	331	103	118	2080	118	497	2038	518
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	385	628	471	464	331	103	118	2080	118	497	2038	518
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	96	157	118	116	83	26	30	520	30	124	510	130
Total Analysis Volume [veh/h]	385	628	471	464	331	103	118	2080	118	497	2038	518
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.18	0.28	0.23	0.13	0.13	0.03	0.32	0.32	0.15	0.40	0.07
Intersection LOS	F											
Intersection V/C	1.028											

Intersection Level Of Service Report
Intersection 15: SR-57 SB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.836

Intersection Setup

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	0	0	0	764	0	601	0	1892	1130	0	2644	475
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	764	0	601	0	1892	1130	0	2644	475
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	191	0	150	0	473	283	0	661	119
Total Analysis Volume [veh/h]	0	0	0	764	0	601	0	1892	1130	0	2644	475
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	7	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.22	0.00	0.27	0.00	0.37	0.00	0.00	0.52	0.00
Intersection LOS	D											
Intersection V/C	0.836											

Intersection Level Of Service Report
Intersection 16: SR-57 NB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.816

Intersection Setup

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	1115	64	506	0	0	192	182	2113	421	0	2761	38
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1115	64	506	0	0	192	182	2113	421	0	2761	38
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	279	16	127	0	0	48	46	528	105	0	690	10
Total Analysis Volume [veh/h]	1115	64	506	0	0	192	182	2113	421	0	2761	38
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Overlap	Protecte	Permiss	Unsigna	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	0	5	5	2	0	0	6	0
Auxiliary Signal Groups						5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.22	0.25	0.25	0.00	0.00	0.00	0.11	0.41	0.00	0.00	0.41	0.41
Intersection LOS	D											
Intersection V/C	0.816											

Intersection Level Of Service Report
Intersection 17: Associated Road at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.935

Intersection Setup

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	245	299	102	335	402	289	309	2154	158	210	1954	213
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	245	299	102	335	402	289	309	2154	158	210	1954	213
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	61	75	26	84	101	72	77	539	40	53	489	53
Total Analysis Volume [veh/h]	245	299	102	335	402	289	309	2154	158	210	1954	213
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.12	0.12	0.10	0.24	0.17	0.18	0.45	0.45	0.12	0.32	0.32
Intersection LOS	E											
Intersection V/C	0.935											

Intersection Level Of Service Report
Intersection 18: Castlegate Lane/Placentia Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.842

Intersection Setup

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	275	54	310	29	26	16	22	2179	313	268	2235	66
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	275	54	310	29	26	16	22	2179	313	268	2235	66
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	69	14	78	7	7	4	6	545	78	67	559	17
Total Analysis Volume [veh/h]	275	54	310	29	26	16	22	2179	313	268	2235	66
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.10	0.18	0.02	0.02	0.02	0.01	0.43	0.18	0.16	0.45	0.45
Intersection LOS	D											
Intersection V/C	0.842											

Brea Mall Expansion, Brea

Vistro File: N:\...\4099 ICU Network.vistro
Report File: N:\...\Sat 2045.pdf

Scenario 12 Sat MD 2045
4/18/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State College Boulevard at Lambert Road	Signalized	ICU 1	WB Thru	0.822	-	D
2	SR-57 SB Ramps at Lambert Road	Signalized	ICU 1	WB Thru	0.837	-	D
3	SR-57 NB Ramps at Lambert Road	Signalized	ICU 1	EB Thru	0.770	-	C
4	Randolph Avenue at Birch Street	Signalized	ICU 1	WB Thru	0.556	-	A
5	State College Boulevard at Birch Street	Signalized	ICU 1	SB Thru	0.772	-	C
6	S Associated Road at Birch Street	Signalized	ICU 1	EB Thru	0.589	-	A
7	Randolph Avenue at Madison Way	Signalized	ICU 1	NB Thru	0.341	-	A
8	Randolph Avenue at Brea Mall	Signalized	ICU 1	NB Thru	0.519	-	A
9	Brea Mall South at State College Boulevard	Signalized	ICU 1	WB Thru	0.650	-	B
10	Harbor Boulevard at Imperial Highway	Signalized	ICU 1	EB Right	0.884	-	D
11	Puente Street at Imperial Highway	Signalized	ICU 1	EB Thru	0.558	-	A
12	Brea Boulevard at Imperial Highway	Signalized	ICU 1	WB Thru	0.867	-	D
13	Randolph Avenue at Imperial Highway	Signalized	ICU 1	WB Thru	0.854	-	D
14	State College Boulevard at Imperial Highway	Signalized	ICU 1	NB Right	1.318	-	F
15	SR-57 SB Ramps at Imperial Highway	Signalized	ICU 1	WB Thru	0.888	-	D
16	SR-57 NB Ramps at Imperial Highway	Signalized	ICU 1	EB Thru	0.955	-	E
17	Associated Road at Imperial Highway	Signalized	ICU 1	EB Thru	0.833	-	D
18	Castlegate Lane/Placentia	Signalized	ICU 1	WB Thru	0.783		C

16	Avenue at Imperial Highway	Signalized	ICU 1	WB Thru	0.783	-	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: State College Boulevard at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.822

Intersection Setup

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	154	290	408	574	406	5	20	1322	290	780	1745	789
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	154	290	408	574	406	5	20	1322	290	780	1745	789
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	73	102	144	102	1	5	331	73	195	436	197
Total Analysis Volume [veh/h]	154	290	408	574	406	5	20	1322	290	780	1745	789
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.14	0.14	0.17	0.12	0.12	0.01	0.24	0.24	0.23	0.34	0.30
Intersection LOS	D											
Intersection V/C	0.822											

Intersection Level Of Service Report
Intersection 2: SR-57 SB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.837

Intersection Setup

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	0	0	0	900	0	1309	0	1680	609	246	2002	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	900	0	1309	0	1680	609	246	2002	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	225	0	327	0	420	152	62	501	0
Total Analysis Volume [veh/h]	0	0	0	900	0	1309	0	1680	609	246	2002	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	7	0	0	0	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.26	0.00	0.39	0.00	0.33	0.18	0.07	0.39	0.00
Intersection LOS	D											
Intersection V/C	0.837											

Intersection Level Of Service Report
Intersection 3: SR-57 NB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.770

Intersection Setup

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	1159	0	519	0	0	0	0	1827	752	0	1067	473
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1159	0	519	0	0	0	0	1827	752	0	1067	473
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	290	0	130	0	0	0	0	457	188	0	267	0
Total Analysis Volume [veh/h]	1159	0	519	0	0	0	0	1827	752	0	1067	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Unsigna
Signal Group	3	0	0	0	0	0	5	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.34	0.00	0.31	0.00	0.00	0.00	0.00	0.38	0.38	0.00	0.21	0.00
Intersection LOS	C											
Intersection V/C	0.770											

Intersection Level Of Service Report
Intersection 4: Randolph Avenue at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.556

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Base Volume Input [veh/h]	107	81	192	63	39	92	93	739	134	168	895	27
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	107	81	192	63	39	92	93	739	134	168	895	27
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	20	48	16	10	23	23	185	34	42	224	7
Total Analysis Volume [veh/h]	107	81	192	63	39	92	93	739	134	168	895	27
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.05	0.11	0.04	0.08	0.08	0.05	0.26	0.26	0.10	0.26	0.02
Intersection LOS	A											
Intersection V/C	0.556											

Intersection Level Of Service Report
Intersection 5: State College Boulevard at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.772

Intersection Setup

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Base Volume Input [veh/h]	165	340	207	301	645	531	321	825	180	183	794	270
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	165	340	207	301	645	531	321	825	180	183	794	270
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	41	85	52	75	161	133	80	206	45	46	199	68
Total Analysis Volume [veh/h]	165	340	207	301	645	531	321	825	180	183	794	270
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.10	0.12	0.09	0.35	0.35	0.09	0.24	0.11	0.05	0.23	0.16
Intersection LOS	C											
Intersection V/C	0.772											

Intersection Level Of Service Report
Intersection 6: S Associated Road at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.589

Intersection Setup

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Base Volume Input [veh/h]	358	21	179	13	23	17	11	861	371	161	856	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	358	21	179	13	23	17	11	861	371	161	856	15
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	90	5	45	3	6	4	3	215	93	40	214	4
Total Analysis Volume [veh/h]	358	21	179	13	23	17	11	861	371	161	856	15
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	8	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups			1,8									
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.01	0.06	0.01	0.02	0.02	0.01	0.36	0.36	0.05	0.26	0.26
Intersection LOS	A											
Intersection V/C	0.589											

Intersection Level Of Service Report
Intersection 7: Randolph Avenue at Madison Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.341

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Base Volume Input [veh/h]	23	395	120	76	280	25	40	12	63	87	4	60
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	395	120	76	280	25	40	12	63	87	4	60
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	99	30	19	70	6	10	3	16	22	1	15
Total Analysis Volume [veh/h]	23	395	120	76	280	25	40	12	63	87	4	60
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.15	0.15	0.04	0.09	0.09	0.02	0.04	0.04	0.05	0.04	0.04
Intersection LOS	A											
Intersection V/C	0.341											

Intersection Level Of Service Report
Intersection 8: Randolph Avenue at Brea Mall

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.519

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Base Volume Input [veh/h]	26	467	453	45	336	23	25	16	28	415	6	82
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	467	453	45	336	23	25	16	28	415	6	82
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	117	113	11	84	6	6	4	7	104	2	21
Total Analysis Volume [veh/h]	26	467	453	45	336	23	25	16	28	415	6	82
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.27	0.27	0.03	0.11	0.11	0.01	0.02	0.02	0.12	0.20	0.20
Intersection LOS	A											
Intersection V/C	0.519											

Intersection Level Of Service Report
Intersection 9: Brea Mall South at State College Boulevard

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.650

Intersection Setup

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Base Volume Input [veh/h]	184	34	99	65	29	555	711	511	41	93	674	38
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	184	34	99	65	29	555	711	511	41	93	674	38
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	46	9	25	16	7	139	178	128	10	23	169	10
Total Analysis Volume [veh/h]	184	34	99	65	29	555	711	511	41	93	674	38
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	4	5	2	0	1	6	0
Auxiliary Signal Groups						4,5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.06	0.06	0.04	0.02	0.12	0.21	0.16	0.16	0.05	0.21	0.21
Intersection LOS	B											
Intersection V/C	0.650											

Intersection Level Of Service Report
Intersection 10: Harbor Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.884

Intersection Setup

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	719	989	282	246	896	315	371	1287	391	368	1390	231
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	719	989	282	246	896	315	371	1287	391	368	1390	231
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	180	247	71	62	224	79	93	322	98	92	348	58
Total Analysis Volume [veh/h]	719	989	282	246	896	315	371	1287	391	368	1390	231
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.21	0.19	0.17	0.07	0.18	0.19	0.11	0.33	0.33	0.11	0.27	0.14
Intersection LOS	D											
Intersection V/C	0.884											

Intersection Level Of Service Report
Intersection 11: Puente Street at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.558

Intersection Setup

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	28	33	107	184	46	134	86	1423	39	84	1461	242
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	28	33	107	184	46	134	86	1423	39	84	1461	242
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	8	27	46	12	34	22	356	10	21	365	61
Total Analysis Volume [veh/h]	28	33	107	184	46	134	86	1423	39	84	1461	242
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.02	0.06	0.11	0.01	0.08	0.05	0.29	0.29	0.05	0.29	0.14
Intersection LOS	A											
Intersection V/C	0.558											

Intersection Level Of Service Report
Intersection 12: Brea Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.867

Intersection Setup

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	451	669	300	490	984	274	296	1448	302	378	1479	435
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	451	669	300	490	984	274	296	1448	302	378	1479	435
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	113	167	75	123	246	69	74	362	76	95	370	109
Total Analysis Volume [veh/h]	451	669	300	490	984	274	296	1448	302	378	1479	435
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.13	0.18	0.14	0.29	0.16	0.09	0.28	0.18	0.11	0.29	0.26
Intersection LOS	D											
Intersection V/C	0.867											

Intersection Level Of Service Report
Intersection 13: Randolph Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.854

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	107	49	209	441	90	314	338	1684	68	151	1996	497
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	107	49	209	441	90	314	338	1684	68	151	1996	497
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	12	52	110	23	79	85	421	17	38	499	124
Total Analysis Volume [veh/h]	107	49	209	441	90	314	338	1684	68	151	1996	497
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.08	0.08	0.13	0.24	0.24	0.10	0.34	0.34	0.09	0.39	0.29
Intersection LOS	D											
Intersection V/C	0.854											

Intersection Level Of Service Report
Intersection 14: State College Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.318

Intersection Setup

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	326	655	780	617	442	195	146	1770	239	699	2190	1155
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	326	655	780	617	442	195	146	1770	239	699	2190	1155
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	82	164	195	154	111	49	37	443	60	175	548	289
Total Analysis Volume [veh/h]	326	655	780	617	442	195	146	1770	239	699	2190	1155
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.19	0.46	0.31	0.19	0.19	0.04	0.30	0.30	0.21	0.43	0.37
Intersection LOS	F											
Intersection V/C	1.318											

Intersection Level Of Service Report
Intersection 15: SR-57 SB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.888

Intersection Setup

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	0	0	0	581	0	831	0	2335	1242	0	2860	367
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	581	0	831	0	2335	1242	0	2860	367
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	145	0	208	0	584	311	0	715	92
Total Analysis Volume [veh/h]	0	0	0	581	0	831	0	2335	1242	0	2860	367
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	7	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.17	0.00	0.28	0.00	0.46	0.00	0.00	0.56	0.00
Intersection LOS	D											
Intersection V/C	0.888											

Intersection Level Of Service Report
Intersection 16: SR-57 NB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.955

Intersection Setup

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	1568	117	638	0	0	371	388	2085	690	0	2220	60
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1568	117	638	0	0	371	388	2085	690	0	2220	60
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	392	29	160	0	0	93	97	521	173	0	555	15
Total Analysis Volume [veh/h]	1568	117	638	0	0	371	388	2085	690	0	2220	60
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Overlap	Protecte	Permiss	Unsigna	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	0	5	5	2	0	0	6	0
Auxiliary Signal Groups						5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.31	0.34	0.34	0.00	0.00	0.00	0.23	0.41	0.00	0.00	0.34	0.34
Intersection LOS	E											
Intersection V/C	0.955											

Intersection Level Of Service Report
Intersection 17: Associated Road at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.833

Intersection Setup

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	260	198	141	320	254	203	253	2001	265	191	1835	227
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	260	198	141	320	254	203	253	2001	265	191	1835	227
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	65	50	35	80	64	51	63	500	66	48	459	57
Total Analysis Volume [veh/h]	260	198	141	320	254	203	253	2001	265	191	1835	227
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.10	0.10	0.09	0.15	0.12	0.15	0.44	0.44	0.11	0.30	0.30
Intersection LOS	D											
Intersection V/C	0.833											

Intersection Level Of Service Report
Intersection 18: Castlegate Lane/Placentia Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.783

Intersection Setup

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	206	18	276	28	12	13	26	2142	314	228	2171	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	206	18	276	28	12	13	26	2142	314	228	2171	50
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	52	5	69	7	3	3	7	536	79	57	543	13
Total Analysis Volume [veh/h]	206	18	276	28	12	13	26	2142	314	228	2171	50
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.07	0.16	0.02	0.01	0.01	0.02	0.42	0.18	0.13	0.44	0.44
Intersection LOS	C											
Intersection V/C	0.783											

APPENDIX C-VI

YEAR 2045 PLUS PROJECT TRAFFIC CONDITIONS

Brea Mall Expansion, Brea

Vistro File: N:\...\4099 ICU Network.vistro
Report File: N:\...\AM 2045+P.pdf

Scenario 13 AM 2045+P
4/12/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State College Boulevard at Lambert Road	Signalized	ICU 1	WB Thru	0.871	-	D
2	SR-57 SB Ramps at Lambert Road	Signalized	ICU 1	WB Thru	0.836	-	D
3	SR-57 NB Ramps at Lambert Road	Signalized	ICU 1	EB Thru	0.885	-	D
4	Randolph Avenue at Birch Street	Signalized	ICU 1	EB Thru	0.435	-	A
5	State College Boulevard at Birch Street	Signalized	ICU 1	SB Thru	0.673	-	B
6	S Associated Road at Birch Street	Signalized	ICU 1	EB Thru	0.736	-	C
7	Randolph Avenue at Madison Way	Signalized	ICU 1	NB Thru	0.154	-	A
8	Randolph Avenue at Brea Mall	Signalized	ICU 1	NB Thru	0.203	-	A
9	Brea Mall South at State College Boulevard	Signalized	ICU 1	WB Thru	0.277	-	A
10	Harbor Boulevard at Imperial Highway	Signalized	ICU 1	EB Thru	1.019	-	F
11	Puente Street at Imperial Highway	Signalized	ICU 1	WB Thru	0.780	-	C
12	Brea Boulevard at Imperial Highway	Signalized	ICU 1	SB Thru	0.952	-	E
13	Randolph Avenue at Imperial Highway	Signalized	ICU 1	WB Thru	0.545	-	A
14	State College Boulevard at Imperial Highway	Signalized	ICU 1	WB Thru	0.857	-	D
15	SR-57 SB Ramps at Imperial Highway	Signalized	ICU 1	WB Thru	0.732	-	C
16	SR-57 NB Ramps at Imperial Highway	Signalized	ICU 1	NB Thru	0.682	-	B
17	Associated Road at Imperial Highway	Signalized	ICU 1	EB Thru	0.839	-	D
18	Castlegate Lane/Placentia	Signalized	ICU 1	EB Thru	0.721		C

16	Avenue at Imperial Highway	Signalized	ICU 1	EB Thru	0.721	-	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: State College Boulevard at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.871

Intersection Setup

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	194	250	235	1011	691	9	16	1594	238	541	2035	627
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	194	250	235	1011	691	9	16	1594	238	541	2035	627
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	63	59	253	173	2	4	399	60	135	509	157
Total Analysis Volume [veh/h]	194	250	235	1011	691	9	16	1594	238	541	2035	627
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.10	0.10	0.30	0.21	0.21	0.00	0.27	0.27	0.16	0.40	0.07
Intersection LOS	D											
Intersection V/C	0.871											

Intersection Level Of Service Report
Intersection 2: SR-57 SB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.836

Intersection Setup

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	0	0	0	1084	0	730	0	1953	650	285	2286	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	1084	0	730	0	1953	650	285	2286	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	271	0	183	0	488	163	71	572	0
Total Analysis Volume [veh/h]	0	0	0	1084	0	730	0	1953	650	285	2286	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	7	0	0	0	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.32	0.00	0.21	0.00	0.38	0.19	0.08	0.45	0.00
Intersection LOS	D											
Intersection V/C	0.836											

Intersection Level Of Service Report
Intersection 3: SR-57 NB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.885

Intersection Setup

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	1104	0	534	0	0	0	0	2605	424	0	1458	530
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1104	0	534	0	0	0	0	2605	424	0	1458	530
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	276	0	134	0	0	0	0	651	106	0	365	0
Total Analysis Volume [veh/h]	1104	0	534	0	0	0	0	2605	424	0	1458	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Unsigna
Signal Group	3	0	0	0	0	0	5	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.32	0.00	0.31	0.00	0.00	0.00	0.00	0.51	0.25	0.00	0.29	0.00
Intersection LOS	D											
Intersection V/C	0.885											

Intersection Level Of Service Report
Intersection 4: Randolph Avenue at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.435

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Base Volume Input [veh/h]	36	46	101	86	39	37	43	656	108	85	597	61
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	36	46	101	86	39	37	43	656	108	85	597	61
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	12	25	22	10	9	11	164	27	21	149	15
Total Analysis Volume [veh/h]	36	46	101	86	39	37	43	656	108	85	597	61
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.03	0.06	0.05	0.04	0.04	0.03	0.22	0.22	0.05	0.18	0.04
Intersection LOS	A											
Intersection V/C	0.435											

Intersection Level Of Service Report
Intersection 5: State College Boulevard at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.673

Intersection Setup

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Base Volume Input [veh/h]	88	176	118	776	974	254	125	582	68	104	664	338
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	88	176	118	776	974	254	125	582	68	104	664	338
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	44	30	194	244	64	31	146	17	26	166	85
Total Analysis Volume [veh/h]	88	176	118	776	974	254	125	582	68	104	664	338
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.05	0.07	0.23	0.36	0.36	0.04	0.17	0.04	0.03	0.20	0.20
Intersection LOS	B											
Intersection V/C	0.673											

Intersection Level Of Service Report
Intersection 6: S Associated Road at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.736

Intersection Setup

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Base Volume Input [veh/h]	286	7	364	63	34	11	5	1105	374	405	898	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	286	7	364	63	34	11	5	1105	374	405	898	11
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	72	2	91	16	9	3	1	276	94	101	225	3
Total Analysis Volume [veh/h]	286	7	364	63	34	11	5	1105	374	405	898	11
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	8	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups			1,8									
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.00	0.10	0.04	0.03	0.03	0.00	0.44	0.44	0.12	0.27	0.27
Intersection LOS	C											
Intersection V/C	0.736											

Intersection Level Of Service Report
Intersection 7: Randolph Avenue at Madison Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.154

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Base Volume Input [veh/h]	28	161	9	6	148	18	36	3	62	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	28	161	9	6	148	18	36	3	62	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	40	2	2	37	5	9	1	16	0	0	0
Total Analysis Volume [veh/h]	28	161	9	6	148	18	36	3	62	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.05	0.05	0.00	0.05	0.05	0.02	0.04	0.04	0.00	0.00	0.00
Intersection LOS	A											
Intersection V/C	0.154											

Intersection Level Of Service Report
Intersection 8: Randolph Avenue at Brea Mall

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.203

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Base Volume Input [veh/h]	14	190	132	28	166	6	1	0	1	117	0	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	190	132	28	166	6	1	0	1	117	0	22
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	48	33	7	42	2	0	0	0	29	0	6
Total Analysis Volume [veh/h]	14	190	132	28	166	6	1	0	1	117	0	22
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.09	0.09	0.02	0.05	0.05	0.00	0.00	0.00	0.03	0.00	0.05
Intersection LOS	A											
Intersection V/C	0.203											

Intersection Level Of Service Report
Intersection 9: Brea Mall South at State College Boulevard

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.277

Intersection Setup

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Base Volume Input [veh/h]	34	9	17	17	6	67	153	283	17	30	512	29
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	34	9	17	17	6	67	153	283	17	30	512	29
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	2	4	4	2	17	38	71	4	8	128	7
Total Analysis Volume [veh/h]	34	9	17	17	6	67	153	283	17	30	512	29
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	4	5	2	0	1	6	0
Auxiliary Signal Groups						4,5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.01	0.01	0.00	0.00	0.05	0.09	0.09	0.02	0.16	0.16
Intersection LOS	A											
Intersection V/C	0.277											

Intersection Level Of Service Report
Intersection 10: Harbor Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.019

Intersection Setup

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	387	773	293	184	1484	334	303	1482	759	424	1327	279
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	387	773	293	184	1484	334	303	1482	759	424	1327	279
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	97	193	73	46	371	84	76	371	190	106	332	70
Total Analysis Volume [veh/h]	387	773	293	184	1484	334	303	1482	759	424	1327	279
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.15	0.17	0.05	0.29	0.20	0.09	0.44	0.44	0.12	0.26	0.16
Intersection LOS	F											
Intersection V/C	1.019											

Intersection Level Of Service Report
Intersection 11: Puente Street at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.780

Intersection Setup

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	64	124	169	300	121	263	246	1472	85	56	1577	195
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	64	124	169	300	121	263	246	1472	85	56	1577	195
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	31	42	75	30	66	62	368	21	14	394	49
Total Analysis Volume [veh/h]	64	124	169	300	121	263	246	1472	85	56	1577	195
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

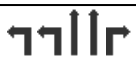
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.07	0.10	0.18	0.04	0.15	0.14	0.31	0.31	0.03	0.31	0.11
Intersection LOS	C											
Intersection V/C	0.780											

Intersection Level Of Service Report
Intersection 12: Brea Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.952

Intersection Setup

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	473	581	203	181	1222	228	177	1715	395	223	1790	122
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	473	581	203	181	1222	228	177	1715	395	223	1790	122
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	118	145	51	45	306	57	44	429	99	56	448	31
Total Analysis Volume [veh/h]	473	581	203	181	1222	228	177	1715	395	223	1790	122
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.14	0.11	0.12	0.05	0.36	0.13	0.05	0.34	0.23	0.07	0.35	0.07
Intersection LOS	E											
Intersection V/C	0.952											

Intersection Level Of Service Report
Intersection 13: Randolph Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.545

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	39	20	71	192	22	78	138	1742	27	43	1882	182
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	39	20	71	192	22	78	138	1742	27	43	1882	182
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	5	18	48	6	20	35	436	7	11	471	46
Total Analysis Volume [veh/h]	39	20	71	192	22	78	138	1742	27	43	1882	182
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

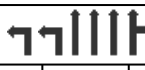
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.03	0.03	0.06	0.06	0.06	0.04	0.35	0.35	0.03	0.37	0.11
Intersection LOS	A											
Intersection V/C	0.545											

Intersection Level Of Service Report
Intersection 14: State College Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.857

Intersection Setup

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	125	186	479	151	502	33	37	1775	214	534	1953	203
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	125	186	479	151	502	33	37	1775	214	534	1953	203
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	31	47	120	38	126	8	9	444	54	134	488	51
Total Analysis Volume [veh/h]	125	186	479	151	502	33	37	1775	214	534	1953	203
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.05	0.28	0.08	0.16	0.16	0.01	0.29	0.29	0.16	0.38	0.04
Intersection LOS	D											
Intersection V/C	0.857											

Intersection Level Of Service Report
Intersection 15: SR-57 SB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.732

Intersection Setup

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	0	0	0	684	0	571	0	1739	828	0	2223	232
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	684	0	571	0	1739	828	0	2223	232
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	171	0	143	0	435	207	0	556	58
Total Analysis Volume [veh/h]	0	0	0	684	0	571	0	1739	828	0	2223	232
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	7	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.20	0.00	0.25	0.00	0.34	0.00	0.00	0.44	0.00
Intersection LOS	C											
Intersection V/C	0.732											

Intersection Level Of Service Report
Intersection 16: SR-57 NB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.682

Intersection Setup

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	1149	31	949	0	0	87	100	1552	635	0	1752	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1149	31	949	0	0	87	100	1552	635	0	1752	14
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	287	8	237	0	0	22	25	388	159	0	438	4
Total Analysis Volume [veh/h]	1149	31	949	0	0	87	100	1552	635	0	1752	14
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Overlap	Protecte	Permiss	Unsigna	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	0	5	5	2	0	0	6	0
Auxiliary Signal Groups						5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.23	0.31	0.31	0.00	0.00	0.00	0.06	0.30	0.00	0.00	0.26	0.26
Intersection LOS	B											
Intersection V/C	0.682											

Intersection Level Of Service Report
Intersection 17: Associated Road at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.839

Intersection Setup

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	171	241	94	190	382	185	238	2193	117	104	1817	112
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	171	241	94	190	382	185	238	2193	117	104	1817	112
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	43	60	24	48	96	46	60	548	29	26	454	28
Total Analysis Volume [veh/h]	171	241	94	190	382	185	238	2193	117	104	1817	112
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.10	0.10	0.06	0.22	0.11	0.14	0.45	0.45	0.06	0.28	0.28
Intersection LOS	D											
Intersection V/C	0.839											

Intersection Level Of Service Report
Intersection 18: Castlegate Lane/Placentia Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.721

Intersection Setup

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	201	14	167	28	33	16	14	2169	487	201	1755	37
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	201	14	167	28	33	16	14	2169	487	201	1755	37
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	50	4	42	7	8	4	4	542	122	50	439	9
Total Analysis Volume [veh/h]	201	14	167	28	33	16	14	2169	487	201	1755	37
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.06	0.10	0.02	0.03	0.03	0.01	0.43	0.29	0.12	0.35	0.35
Intersection LOS	C											
Intersection V/C	0.721											

Brea Mall Expansion, Brea

Vistro File: N:\...\4099 ICU Network.vistro
Report File: N:\...\PM 2045+P.pdf

Scenario 14 PM 2045+P
4/12/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State College Boulevard at Lambert Road	Signalized	ICU 1	EB Thru	0.868	-	D
2	SR-57 SB Ramps at Lambert Road	Signalized	ICU 1	WB Thru	0.692	-	B
3	SR-57 NB Ramps at Lambert Road	Signalized	ICU 1	EB Thru	0.588	-	A
4	Randolph Avenue at Birch Street	Signalized	ICU 1	WB Thru	0.647	-	B
5	State College Boulevard at Birch Street	Signalized	ICU 1	WB Right	0.864	-	D
6	S Associated Road at Birch Street	Signalized	ICU 1	WB Thru	0.741	-	C
7	Randolph Avenue at Madison Way	Signalized	ICU 1	NB Thru	0.270	-	A
8	Randolph Avenue at Brea Mall	Signalized	ICU 1	NB Thru	0.444	-	A
9	Brea Mall South at State College Boulevard	Signalized	ICU 1	EB Left	0.512	-	A
10	Harbor Boulevard at Imperial Highway	Signalized	ICU 1	EB Thru	1.026	-	F
11	Puente Street at Imperial Highway	Signalized	ICU 1	WB Thru	0.712	-	C
12	Brea Boulevard at Imperial Highway	Signalized	ICU 1	EB Thru	0.889	-	D
13	Randolph Avenue at Imperial Highway	Signalized	ICU 1	WB Thru	0.765	-	C
14	State College Boulevard at Imperial Highway	Signalized	ICU 1	WB Thru	1.040	-	F
15	SR-57 SB Ramps at Imperial Highway	Signalized	ICU 1	WB Thru	0.855	-	D
16	SR-57 NB Ramps at Imperial Highway	Signalized	ICU 1	WB Thru	0.829	-	D
17	Associated Road at Imperial Highway	Signalized	ICU 1	EB Thru	0.940	-	E
18	Castlegate Lane/Placentia	Signalized	ICU 1	WB Thru	0.844		D

16	Avenue at Imperial Highway	Signalized	ICU 1	WB Thru	0.844	-	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: State College Boulevard at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.868

Intersection Setup

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	368	687	349	637	459	17	44	1694	302	454	1361	801
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	368	687	349	637	459	17	44	1694	302	454	1361	801
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	92	172	87	159	115	4	11	424	76	114	340	200
Total Analysis Volume [veh/h]	368	687	349	637	459	17	44	1694	302	454	1361	801
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.20	0.20	0.19	0.14	0.14	0.01	0.29	0.29	0.13	0.27	0.28
Intersection LOS	D											
Intersection V/C	0.868											

Intersection Level Of Service Report
Intersection 2: SR-57 SB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.692

Intersection Setup

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	0	0	0	497	0	895	0	1512	877	280	1836	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	497	0	895	0	1512	877	280	1836	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	124	0	224	0	378	219	70	459	0
Total Analysis Volume [veh/h]	0	0	0	497	0	895	0	1512	877	280	1836	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	7	0	0	0	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.15	0.00	0.26	0.00	0.30	0.26	0.08	0.36	0.00
Intersection LOS	B											
Intersection V/C	0.692											

Intersection Level Of Service Report
Intersection 3: SR-57 NB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.588

Intersection Setup

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	710	0	330	0	0	0	0	1638	602	0	1203	571
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	710	0	330	0	0	0	0	1638	602	0	1203	571
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	178	0	83	0	0	0	0	410	151	0	301	0
Total Analysis Volume [veh/h]	710	0	330	0	0	0	0	1638	602	0	1203	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Unsigna
Signal Group	3	0	0	0	0	0	5	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.21	0.00	0.19	0.00	0.00	0.00	0.00	0.33	0.33	0.00	0.24	0.00
Intersection LOS	A											
Intersection V/C	0.588											

Intersection Level Of Service Report
Intersection 4: Randolph Avenue at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.647

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Base Volume Input [veh/h]	148	76	187	55	54	112	93	770	117	208	1215	49
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	148	76	187	55	54	112	93	770	117	208	1215	49
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	19	47	14	14	28	23	193	29	52	304	12
Total Analysis Volume [veh/h]	148	76	187	55	54	112	93	770	117	208	1215	49
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.04	0.11	0.03	0.10	0.10	0.05	0.26	0.26	0.12	0.36	0.03
Intersection LOS	B											
Intersection V/C	0.647											

Intersection Level Of Service Report
Intersection 5: State College Boulevard at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.864

Intersection Setup

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Base Volume Input [veh/h]	157	473	184	393	430	363	320	893	182	170	1140	749
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	157	473	184	393	430	363	320	893	182	170	1140	749
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	118	46	98	108	91	80	223	46	43	285	187
Total Analysis Volume [veh/h]	157	473	184	393	430	363	320	893	182	170	1140	749
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.14	0.11	0.12	0.23	0.23	0.09	0.26	0.11	0.05	0.34	0.44
Intersection LOS	D											
Intersection V/C	0.864											

Intersection Level Of Service Report
Intersection 6: S Associated Road at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.741

Intersection Setup

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Base Volume Input [veh/h]	559	37	403	11	23	11	17	1042	349	332	1472	19
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	559	37	403	11	23	11	17	1042	349	332	1472	19
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	140	9	101	3	6	3	4	261	87	83	368	5
Total Analysis Volume [veh/h]	559	37	403	11	23	11	17	1042	349	332	1472	19
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	8	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups			1,8									
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.16	0.02	0.14	0.01	0.02	0.02	0.01	0.41	0.41	0.10	0.44	0.44
Intersection LOS	C											
Intersection V/C	0.741											

Intersection Level Of Service Report
Intersection 7: Randolph Avenue at Madison Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.270

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Base Volume Input [veh/h]	48	368	45	29	290	32	68	4	55	79	4	38
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	48	368	45	29	290	32	68	4	55	79	4	38
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	92	11	7	73	8	17	1	14	20	1	10
Total Analysis Volume [veh/h]	48	368	45	29	290	32	68	4	55	79	4	38
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.12	0.12	0.02	0.09	0.09	0.04	0.03	0.03	0.05	0.02	0.02
Intersection LOS	A											
Intersection V/C	0.270											

Intersection Level Of Service Report
Intersection 8: Randolph Avenue at Brea Mall

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.444

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Base Volume Input [veh/h]	17	367	430	56	392	21	18	3	12	328	3	57
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	367	430	56	392	21	18	3	12	328	3	57
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	92	108	14	98	5	5	1	3	82	1	14
Total Analysis Volume [veh/h]	17	367	430	56	392	21	18	3	12	328	3	57
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.23	0.23	0.03	0.12	0.12	0.01	0.01	0.01	0.10	0.15	0.15
Intersection LOS	A											
Intersection V/C	0.444											

Intersection Level Of Service Report
Intersection 9: Brea Mall South at State College Boulevard

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.512

Intersection Setup

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Base Volume Input [veh/h]	151	26	67	56	20	428	620	595	23	104	490	49
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	151	26	67	56	20	428	620	595	23	104	490	49
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	38	7	17	14	5	107	155	149	6	26	123	12
Total Analysis Volume [veh/h]	151	26	67	56	20	428	620	595	23	104	490	49
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	4	5	2	0	1	6	0
Auxiliary Signal Groups						4,5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.05	0.04	0.03	0.01	0.07	0.18	0.18	0.18	0.06	0.16	0.16
Intersection LOS	A											
Intersection V/C	0.512											

Intersection Level Of Service Report
Intersection 10: Harbor Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.026

Intersection Setup

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	786	1305	282	294	1020	439	336	1381	417	455	1699	301
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	786	1305	282	294	1020	439	336	1381	417	455	1699	301
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	197	326	71	74	255	110	84	345	104	114	425	75
Total Analysis Volume [veh/h]	786	1305	282	294	1020	439	336	1381	417	455	1699	301
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.23	0.26	0.17	0.09	0.20	0.26	0.10	0.35	0.35	0.13	0.33	0.18
Intersection LOS	F											
Intersection V/C	1.026											

Intersection Level Of Service Report
Intersection 11: Puente Street at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.712

Intersection Setup

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	38	51	93	243	113	228	146	1729	40	114	1930	401
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	38	51	93	243	113	228	146	1729	40	114	1930	401
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	13	23	61	28	57	37	432	10	29	483	100
Total Analysis Volume [veh/h]	38	51	93	243	113	228	146	1729	40	114	1930	401
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

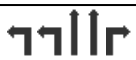
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.03	0.05	0.14	0.03	0.13	0.09	0.35	0.35	0.07	0.38	0.24
Intersection LOS	C											
Intersection V/C	0.712											

Intersection Level Of Service Report
Intersection 12: Brea Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.889

Intersection Setup

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	553	989	319	277	712	234	263	1965	455	277	1884	207
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	553	989	319	277	712	234	263	1965	455	277	1884	207
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	138	247	80	69	178	59	66	491	114	69	471	52
Total Analysis Volume [veh/h]	553	989	319	277	712	234	263	1965	455	277	1884	207
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.16	0.19	0.19	0.08	0.21	0.14	0.08	0.39	0.27	0.08	0.37	0.12
Intersection LOS	D											
Intersection V/C	0.889											

Intersection Level Of Service Report
Intersection 13: Randolph Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.765

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	61	41	72	369	32	250	333	1903	47	77	2114	385
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	61	41	72	369	32	250	333	1903	47	77	2114	385
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	10	18	92	8	63	83	476	12	19	529	96
Total Analysis Volume [veh/h]	61	41	72	369	32	250	333	1903	47	77	2114	385
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.03	0.03	0.11	0.17	0.17	0.10	0.38	0.38	0.05	0.41	0.23
Intersection LOS	C											
Intersection V/C	0.765											

Intersection Level Of Service Report
Intersection 14: State College Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.040

Intersection Setup

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	391	655	471	481	339	103	118	2096	122	497	2061	591
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	391	655	471	481	339	103	118	2096	122	497	2061	591
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	98	164	118	120	85	26	30	524	31	124	515	148
Total Analysis Volume [veh/h]	391	655	471	481	339	103	118	2096	122	497	2061	591
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.12	0.19	0.28	0.24	0.13	0.13	0.03	0.33	0.33	0.15	0.40	0.11
Intersection LOS	F											
Intersection V/C	1.040											

Intersection Level Of Service Report
Intersection 15: SR-57 SB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.855

Intersection Setup

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	0	0	0	764	0	614	0	1913	1142	0	2727	475
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	764	0	614	0	1913	1142	0	2727	475
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	191	0	154	0	478	286	0	682	119
Total Analysis Volume [veh/h]	0	0	0	764	0	614	0	1913	1142	0	2727	475
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	7	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.22	0.00	0.27	0.00	0.38	0.00	0.00	0.53	0.00
Intersection LOS	D											
Intersection V/C	0.855											

Intersection Level Of Service Report
Intersection 16: SR-57 NB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.829

Intersection Setup

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	1151	64	506	0	0	193	183	2129	425	0	2807	38
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1151	64	506	0	0	193	183	2129	425	0	2807	38
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	288	16	127	0	0	48	46	532	106	0	702	10
Total Analysis Volume [veh/h]	1151	64	506	0	0	193	183	2129	425	0	2807	38
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Overlap	Protecte	Permiss	Unsigna	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	0	5	5	2	0	0	6	0
Auxiliary Signal Groups						5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.23	0.25	0.25	0.00	0.00	0.00	0.11	0.42	0.00	0.00	0.42	0.42
Intersection LOS	D											
Intersection V/C	0.829											

Intersection Level Of Service Report
Intersection 17: Associated Road at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.940

Intersection Setup

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	250	299	102	335	402	292	310	2167	160	210	1992	213
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	250	299	102	335	402	292	310	2167	160	210	1992	213
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	63	75	26	84	101	73	78	542	40	53	498	53
Total Analysis Volume [veh/h]	250	299	102	335	402	292	310	2167	160	210	1992	213
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.12	0.12	0.10	0.24	0.17	0.18	0.46	0.46	0.12	0.32	0.32
Intersection LOS	E											
Intersection V/C	0.940											

Intersection Level Of Service Report
Intersection 18: Castlegate Lane/Placentia Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.844

Intersection Setup

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	290	54	310	29	26	16	22	2188	318	268	2258	66
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	290	54	310	29	26	16	22	2188	318	268	2258	66
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	73	14	78	7	7	4	6	547	80	67	565	17
Total Analysis Volume [veh/h]	290	54	310	29	26	16	22	2188	318	268	2258	66
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.10	0.18	0.02	0.02	0.02	0.01	0.43	0.19	0.16	0.46	0.46
Intersection LOS	D											
Intersection V/C	0.844											

Brea Mall Expansion, Brea

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Report File: N:\...\Sat 2045+P.pdf

Scenario 15 Sat MD 2045+P
4/18/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State College Boulevard at Lambert Road	Signalized	ICU 1	WB Thru	0.826	-	D
2	SR-57 SB Ramps at Lambert Road	Signalized	ICU 1	WB Thru	0.839	-	D
3	SR-57 NB Ramps at Lambert Road	Signalized	ICU 1	EB Thru	0.772	-	C
4	Randolph Avenue at Birch Street	Signalized	ICU 1	WB Thru	0.559	-	A
5	State College Boulevard at Birch Street	Signalized	ICU 1	SB Thru	0.774	-	C
6	S Associated Road at Birch Street	Signalized	ICU 1	EB Thru	0.590	-	A
7	Randolph Avenue at Madison Way	Signalized	ICU 1	NB Right	0.346	-	A
8	Randolph Avenue at Brea Mall	Signalized	ICU 1	NB Thru	0.566	-	A
9	Brea Mall South at State College Boulevard	Signalized	ICU 1	EB Left	0.700	-	C
10	Harbor Boulevard at Imperial Highway	Signalized	ICU 1	EB Thru	0.885	-	D
11	Puente Street at Imperial Highway	Signalized	ICU 1	WB Thru	0.565	-	A
12	Brea Boulevard at Imperial Highway	Signalized	ICU 1	WB Thru	0.875	-	D
13	Randolph Avenue at Imperial Highway	Signalized	ICU 1	WB Thru	0.892	-	D
14	State College Boulevard at Imperial Highway	Signalized	ICU 1	NB Right	1.352	-	F
15	SR-57 SB Ramps at Imperial Highway	Signalized	ICU 1	WB Thru	0.895	-	D
16	SR-57 NB Ramps at Imperial Highway	Signalized	ICU 1	EB Thru	0.960	-	E
17	Associated Road at Imperial Highway	Signalized	ICU 1	EB Thru	0.840	-	D
18	Castlegate Lane/Placentia	Signalized	ICU 1	WB Thru	0.787		C

16	Avenue at Imperial Highway	Signalized	ICU 1	WB Thru	0.767	-	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: State College Boulevard at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.826

Intersection Setup

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	154	294	417	574	408	5	20	1322	290	784	1745	789
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	154	294	417	574	408	5	20	1322	290	784	1745	789
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	74	104	144	102	1	5	331	73	196	436	197
Total Analysis Volume [veh/h]	154	294	417	574	408	5	20	1322	290	784	1745	789
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.14	0.14	0.17	0.12	0.12	0.01	0.24	0.24	0.23	0.34	0.30
Intersection LOS	D											
Intersection V/C	0.826											

Intersection Level Of Service Report
Intersection 2: SR-57 SB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.839

Intersection Setup

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	0	0	0	900	0	1311	0	1689	609	246	2003	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	900	0	1311	0	1689	609	246	2003	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	225	0	328	0	422	152	62	501	0
Total Analysis Volume [veh/h]	0	0	0	900	0	1311	0	1689	609	246	2003	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	7	0	0	0	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.26	0.00	0.39	0.00	0.33	0.18	0.07	0.39	0.00
Intersection LOS	D											
Intersection V/C	0.839											

Intersection Level Of Service Report
Intersection 3: SR-57 NB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.772

Intersection Setup

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	1159	0	519	0	0	0	0	1831	758	0	1068	473
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1159	0	519	0	0	0	0	1831	758	0	1068	473
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	290	0	130	0	0	0	0	458	190	0	267	0
Total Analysis Volume [veh/h]	1159	0	519	0	0	0	0	1831	758	0	1068	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Unsigna
Signal Group	3	0	0	0	0	0	5	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.34	0.00	0.31	0.00	0.00	0.00	0.00	0.38	0.38	0.00	0.21	0.00
Intersection LOS	C											
Intersection V/C	0.772											

Intersection Level Of Service Report
Intersection 4: Randolph Avenue at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.559

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Base Volume Input [veh/h]	120	82	194	63	40	92	93	739	140	169	895	27
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	120	82	194	63	40	92	93	739	140	169	895	27
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	30	21	49	16	10	23	23	185	35	42	224	7
Total Analysis Volume [veh/h]	120	82	194	63	40	92	93	739	140	169	895	27
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.05	0.11	0.04	0.08	0.08	0.05	0.26	0.26	0.10	0.26	0.02
Intersection LOS	A											
Intersection V/C	0.559											

Intersection Level Of Service Report
Intersection 5: State College Boulevard at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.774

Intersection Setup

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Base Volume Input [veh/h]	165	353	212	301	651	531	321	827	180	185	795	270
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	165	353	212	301	651	531	321	827	180	185	795	270
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	41	88	53	75	163	133	80	207	45	46	199	68
Total Analysis Volume [veh/h]	165	353	212	301	651	531	321	827	180	185	795	270
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.10	0.12	0.09	0.35	0.35	0.09	0.24	0.11	0.05	0.23	0.16
Intersection LOS	C											
Intersection V/C	0.774											

Intersection Level Of Service Report
Intersection 6: S Associated Road at Birch Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.590

Intersection Setup

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Base Volume Input [veh/h]	358	21	179	13	23	17	11	867	371	161	860	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	358	21	179	13	23	17	11	867	371	161	860	15
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	90	5	45	3	6	4	3	217	93	40	215	4
Total Analysis Volume [veh/h]	358	21	179	13	23	17	11	867	371	161	860	15
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	8	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups			1,8									
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.01	0.06	0.01	0.02	0.02	0.01	0.36	0.36	0.05	0.26	0.26
Intersection LOS	A											
Intersection V/C	0.590											

Intersection Level Of Service Report
Intersection 7: Randolph Avenue at Madison Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.346

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Base Volume Input [veh/h]	23	410	120	76	288	25	40	12	63	87	4	60
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	410	120	76	288	25	40	12	63	87	4	60
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	103	30	19	72	6	10	3	16	22	1	15
Total Analysis Volume [veh/h]	23	410	120	76	288	25	40	12	63	87	4	60
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.16	0.16	0.04	0.09	0.09	0.02	0.04	0.04	0.05	0.04	0.04
Intersection LOS	A											
Intersection V/C	0.346											

Intersection Level Of Service Report
Intersection 8: Randolph Avenue at Brea Mall

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.566

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Base Volume Input [veh/h]	26	464	501	54	335	23	25	16	28	494	6	100
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	464	501	54	335	23	25	16	28	494	6	100
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	116	125	14	84	6	6	4	7	124	2	25
Total Analysis Volume [veh/h]	26	464	501	54	335	23	25	16	28	494	6	100
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.28	0.28	0.03	0.11	0.11	0.01	0.02	0.02	0.15	0.24	0.24
Intersection LOS	A											
Intersection V/C	0.566											

Intersection Level Of Service Report
Intersection 9: Brea Mall South at State College Boulevard

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.700

Intersection Setup

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Base Volume Input [veh/h]	184	34	99	88	29	636	743	506	41	93	673	47
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	184	34	99	88	29	636	743	506	41	93	673	47
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	46	9	25	22	7	159	186	127	10	23	168	12
Total Analysis Volume [veh/h]	184	34	99	88	29	636	743	506	41	93	673	47
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	4	5	2	0	1	6	0
Auxiliary Signal Groups						4,5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.06	0.06	0.05	0.02	0.16	0.22	0.16	0.16	0.05	0.21	0.21
Intersection LOS	C											
Intersection V/C	0.700											

Intersection Level Of Service Report
Intersection 10: Harbor Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.885

Intersection Setup

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	719	989	282	248	896	315	371	1294	391	368	1407	236
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	719	989	282	248	896	315	371	1294	391	368	1407	236
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	180	247	71	62	224	79	93	324	98	92	352	59
Total Analysis Volume [veh/h]	719	989	282	248	896	315	371	1294	391	368	1407	236
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.21	0.19	0.17	0.07	0.18	0.19	0.11	0.33	0.33	0.11	0.28	0.14
Intersection LOS	D											
Intersection V/C	0.885											

Intersection Level Of Service Report
Intersection 11: Puente Street at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.565

Intersection Setup

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	28	33	109	186	46	134	86	1433	39	88	1484	248
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	28	33	109	186	46	134	86	1433	39	88	1484	248
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	8	27	47	12	34	22	358	10	22	371	62
Total Analysis Volume [veh/h]	28	33	109	186	46	134	86	1433	39	88	1484	248
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

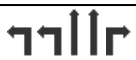
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.02	0.06	0.11	0.01	0.08	0.05	0.29	0.29	0.05	0.29	0.15
Intersection LOS	A											
Intersection V/C	0.565											

Intersection Level Of Service Report
Intersection 12: Brea Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.875

Intersection Setup

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	451	669	307	490	984	274	296	1462	302	396	1512	435
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	451	669	307	490	984	274	296	1462	302	396	1512	435
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	113	167	77	123	246	69	74	366	76	99	378	109
Total Analysis Volume [veh/h]	451	669	307	490	984	274	296	1462	302	396	1512	435
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.13	0.18	0.14	0.29	0.16	0.09	0.29	0.18	0.12	0.30	0.26
Intersection LOS	D											
Intersection V/C	0.875											

Intersection Level Of Service Report
Intersection 13: Randolph Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.892

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	107	49	209	467	90	367	360	1684	68	151	1996	520
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	107	49	209	467	90	367	360	1684	68	151	1996	520
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	12	52	117	23	92	90	421	17	38	499	130
Total Analysis Volume [veh/h]	107	49	209	467	90	367	360	1684	68	151	1996	520
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

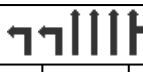
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.08	0.08	0.14	0.27	0.27	0.11	0.34	0.34	0.09	0.39	0.31
Intersection LOS	D											
Intersection V/C	0.892											

Intersection Level Of Service Report
Intersection 14: State College Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.352

Intersection Setup

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	331	665	780	677	464	195	146	1791	244	699	2208	1173
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	331	665	780	677	464	195	146	1791	244	699	2208	1173
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	83	166	195	169	116	49	37	448	61	175	552	293
Total Analysis Volume [veh/h]	331	665	780	677	464	195	146	1791	244	699	2208	1173
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.20	0.46	0.34	0.19	0.19	0.04	0.30	0.30	0.21	0.43	0.35
Intersection LOS	F											
Intersection V/C	1.352											

Intersection Level Of Service Report
Intersection 15: SR-57 SB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.895

Intersection Setup

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	0	0	0	581	0	836	0	2386	1272	0	2891	367
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	581	0	836	0	2386	1272	0	2891	367
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	145	0	209	0	597	318	0	723	92
Total Analysis Volume [veh/h]	0	0	0	581	0	836	0	2386	1272	0	2891	367
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	7	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.17	0.00	0.28	0.00	0.47	0.00	0.00	0.57	0.00
Intersection LOS	D											
Intersection V/C	0.895											

Intersection Level Of Service Report
Intersection 16: SR-57 NB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.960

Intersection Setup

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	1581	117	638	0	0	372	389	2123	702	0	2238	60
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1581	117	638	0	0	372	389	2123	702	0	2238	60
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	395	29	160	0	0	93	97	531	176	0	560	15
Total Analysis Volume [veh/h]	1581	117	638	0	0	372	389	2123	702	0	2238	60
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Overlap	Protecte	Permiss	Unsigna	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	0	5	5	2	0	0	6	0
Auxiliary Signal Groups						5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.31	0.34	0.34	0.00	0.00	0.00	0.23	0.42	0.00	0.00	0.34	0.34
Intersection LOS	E											
Intersection V/C	0.960											

Intersection Level Of Service Report
Intersection 17: Associated Road at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.840

Intersection Setup

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	262	198	141	320	254	204	256	2033	270	191	1850	227
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	262	198	141	320	254	204	256	2033	270	191	1850	227
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	66	50	35	80	64	51	64	508	68	48	463	57
Total Analysis Volume [veh/h]	262	198	141	320	254	204	256	2033	270	191	1850	227
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.10	0.10	0.09	0.15	0.12	0.15	0.45	0.45	0.11	0.31	0.31
Intersection LOS	D											
Intersection V/C	0.840											

Intersection Level Of Service Report
Intersection 18: Castlegate Lane/Placentia Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.787

Intersection Setup

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	211	18	276	28	12	13	26	2161	327	228	2180	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	211	18	276	28	12	13	26	2161	327	228	2180	50
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	53	5	69	7	3	3	7	540	82	57	545	13
Total Analysis Volume [veh/h]	211	18	276	28	12	13	26	2161	327	228	2180	50
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.07	0.16	0.02	0.01	0.01	0.02	0.42	0.19	0.13	0.44	0.44
Intersection LOS	C											
Intersection V/C	0.787											

APPENDIX C-VII

YEAR 2045 PLUS PROJECT WITH IMPROVEMENTS TRAFFIC CONDITIONS

Brea Mall Expansion, Brea

Vistro File: N:\...\4099 ICU Network.vistro
Report File: N:\...\AM 2045+P-MIT.pdf

Scenario 18 [MIT] AM 2045+P
4/18/2022

Intersection Analysis Summary

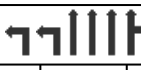
ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
14	State College Boulevard at Imperial Highway	Signalized	ICU 1	WB Thru	0.826	-	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 14: State College Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.826

Intersection Setup

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	125	186	479	151	502	33	37	1775	214	534	1953	203
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	125	186	479	151	502	33	37	1775	214	534	1953	203
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	31	47	120	38	126	8	9	444	54	134	488	51
Total Analysis Volume [veh/h]	125	186	479	151	502	33	37	1775	214	534	1953	203
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.05	0.28	0.04	0.15	0.02	0.01	0.29	0.29	0.16	0.38	0.08
Intersection LOS	D											
Intersection V/C	0.826											

Brea Mall Expansion, Brea

Vistro File: N:\...\4099 ICU Network.vistro
Report File: N:\...\PM 2045+P-MIT.pdf

Scenario 17 [MIT] PM 2045+P
4/18/2022

Intersection Analysis Summary

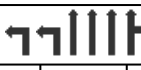
ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
14	State College Boulevard at Imperial Highway	Signalized	ICU 1	WB Thru	0.941	-	E

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 14: State College Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.941

Intersection Setup

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	391	655	471	481	339	103	118	2096	122	497	2061	591
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	391	655	471	481	339	103	118	2096	122	497	2061	591
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	98	164	118	120	85	26	30	524	31	124	515	148
Total Analysis Volume [veh/h]	391	655	471	481	339	103	118	2096	122	497	2061	591
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.12	0.19	0.28	0.14	0.10	0.06	0.03	0.33	0.33	0.15	0.40	0.21
Intersection LOS	E											
Intersection V/C	0.941											

Brea Mall Expansion, Brea

Vistro File: N:\...\4099 ICU Network.vistro
Report File: N:\...\Sat 2045+P-MIT.pdf
Scenario 16 [MIT] Sat MD 2045+P
4/18/2022

Intersection Analysis Summary

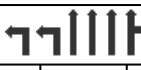
ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
14	State College Boulevard at Imperial Highway	Signalized	ICU 1	WB Right	1.242	-	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 14: State College Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.242

Intersection Setup

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	331	665	780	677	464	195	146	1791	244	699	2208	1173
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	331	665	780	677	464	195	146	1791	244	699	2208	1173
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	83	166	195	169	116	49	37	448	61	175	552	293
Total Analysis Volume [veh/h]	331	665	780	677	464	195	146	1791	244	699	2208	1173
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.20	0.46	0.20	0.14	0.11	0.04	0.30	0.30	0.21	0.43	0.49
Intersection LOS	F											
Intersection V/C	1.242											

APPENDIX D

INTERSECTION LEVEL OF SERVICE CALCULATION WORKSHEETS – HCM

APPENDIX D-I

EXISTING TRAFFIC CONDITIONS

Brea Mall Expansion, Brea

Vistro File: N:\...\4099 HCM Network.vistro
Report File: N:\...\AM Ex.pdf

Scenario 1 AM Existing
4/12/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State College Boulevard at Lambert Road	Signalized	HCM 6th Edition	NB Thru	0.746	34.0	C
2	SR-57 SB Ramps at Lambert Road	Signalized	HCM 6th Edition	WB Left	0.838	27.1	C
3	SR-57 NB Ramps at Lambert Road	Signalized	HCM 6th Edition	EB Left	0.852	28.0	C
4	Randolph Avenue at Birch Street	Signalized	HCM 6th Edition	WB Left	0.356	14.2	B
5	State College Boulevard at Birch Street	Signalized	HCM 6th Edition	WB Left	0.597	37.6	D
6	S Associated Road at Birch Street	Signalized	HCM 6th Edition	EB Left	0.765	26.1	C
7	Randolph Avenue at Madison Way	Signalized	HCM 6th Edition	SB Left	0.140	17.3	B
8	Randolph Avenue at Brea Mall	Signalized	HCM 6th Edition	EB Left	0.106	8.2	A
9	Brea Mall South at State College Boulevard	Signalized	HCM 6th Edition	WB Left	0.205	15.6	B
10	Harbor Boulevard at Imperial Highway	Signalized	HCM 6th Edition	WB Left	0.871	40.4	D
11	Puente Street at Imperial Highway	Signalized	HCM 6th Edition	SB Left	0.514	18.1	B
12	Brea Boulevard at Imperial Highway	Signalized	HCM 6th Edition	WB Left	0.860	40.2	D
13	Randolph Avenue at Imperial Highway	Signalized	HCM 6th Edition	WB Left	0.481	12.4	B
14	State College Boulevard at Imperial Highway	Signalized	HCM 6th Edition	SB Left	0.781	30.4	C
15	SR-57 SB Ramps at Imperial Highway	Signalized	HCM 6th Edition	SB Left	0.582	15.3	B
16	SR-57 NB Ramps at Imperial Highway	Signalized	HCM 6th Edition	EB Left	0.630	21.2	C
17	Associated Road at Imperial Highway	Signalized	HCM 6th Edition	WB Left	0.773	27.2	C
18	Castlegate Lane/Placentia	Signalized	HCM 6th	EB Left	0.669	18.1	B

16	Avenue at Imperial Highway	Signalized	Edition	EB Left	0.669	18.1	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: State College Boulevard at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	34.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.746

Intersection Setup

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	151	192	133	865	582	8	14	1220	196	431	1519	534
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	151	192	133	865	582	8	14	1220	196	431	1519	534
Peak Hour Factor	0.9130	0.9130	0.9130	0.9700	0.9700	0.9700	0.9540	0.9540	0.9540	0.9540	0.9540	0.9540
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	41	53	36	223	150	2	4	320	51	113	398	140
Total Analysis Volume [veh/h]	165	210	146	892	600	8	15	1279	205	452	1592	560
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	12	10	0	46	44	0	10	39	0	25	54	54
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	0	0	0	33	0	0	28	0	0	22	22
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	8	10	10	10	35	38	38	2	41	41	18	56	96
g / C, Green / Cycle	0.06	0.08	0.08	0.08	0.29	0.31	0.31	0.02	0.34	0.34	0.15	0.47	0.80
(v / s)_i Volume / Saturation Flow Rate	0.05	0.07	0.06	0.06	0.25	0.16	0.16	0.00	0.19	0.20	0.13	0.28	0.29
s, saturation flow rate [veh/h]	3500	1900	1900	1900	3500	1900	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	222	160	160	160	1022	594	594	72	1951	650	518	2678	1511
d1, Uniform Delay [s]	55.25	53.88	53.73	53.43	40.39	33.76	33.74	57.83	32.25	32.32	50.03	23.42	3.58
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.82	8.05	6.90	5.14	2.51	0.69	0.68	1.41	1.21	3.66	4.72	0.98	0.70
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.74	0.78	0.75	0.69	0.87	0.51	0.51	0.21	0.57	0.57	0.87	0.59	0.37
d, Delay for Lane Group [s/veh]	60.06	61.93	60.63	58.56	42.90	34.45	34.42	59.24	33.46	35.98	54.75	24.40	4.28
Lane Group LOS	E	E	E	E	D	C	C	E	C	D	D	C	A
Critical Lane Group	No	Yes	No	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.60	4.07	3.86	3.46	12.76	7.38	7.35	0.24	8.97	9.50	6.96	11.12	3.41
50th-Percentile Queue Length [ft/ln]	65.09	101.7	96.58	86.56	319.06	184.42	183.69	5.96	224.17	237.62	174.11	277.91	85.29
95th-Percentile Queue Length [veh/ln]	4.69	7.33	6.95	6.23	18.62	11.83	11.79	0.43	13.88	14.56	11.29	16.58	6.14
95th-Percentile Queue Length [ft/ln]	117.1	183.2	173.8	155.8	465.53	295.78	294.83	10.73	346.94	364.02	282.31	414.61	153.52

Movement, Approach, & Intersection Results

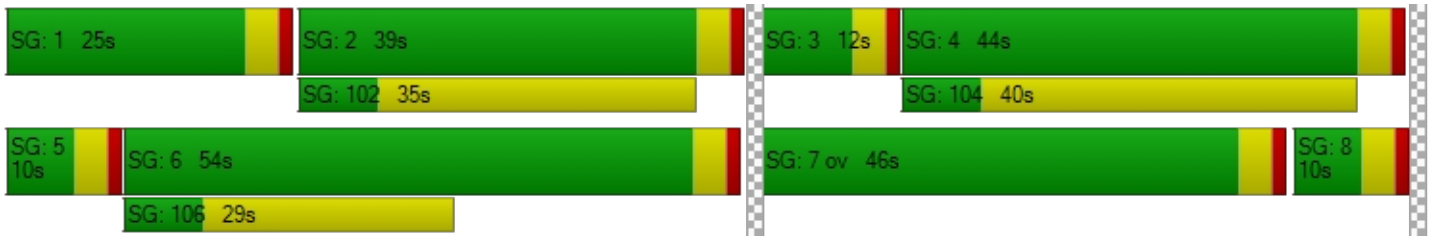
d_M, Delay for Movement [s/veh]	60.06	61.41	58.98	42.90	34.44	34.42	59.24	33.79	35.98	54.75	24.40	4.28
Movement LOS	E	E	E	D	C	C	E	C	D	D	C	A
d_A, Approach Delay [s/veh]	60.33			39.47			34.35			25.34		
Approach LOS	E			D			C			C		
d_I, Intersection Delay [s/veh]	33.98											
Intersection LOS	C											
Intersection V/C	0.746											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.52	49.52	49.52	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.855	2.838	3.217	0.000
Crosswalk LOS	C	C	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	100	666	583	833
d_b, Bicycle Delay [s]	54.17	26.68	30.12	20.43
l_b,int, Bicycle LOS Score for Intersection	1.989	2.797	2.178	2.992
Bicycle LOS	A	C	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: SR-57 SB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	27.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.838

Intersection Setup

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	0	0	0	1026	0	513	0	1659	565	217	2027	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	1026	0	513	0	1659	565	217	2027	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.8640	1.0000	0.8640	1.0000	0.9400	0.9400	0.9190	0.9190	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	297	0	148	0	441	150	59	551	0
Total Analysis Volume [veh/h]	0	0	0	1188	0	594	0	1765	601	236	2206	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	7	0	0	0	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	6	0	0	0	6	0	6	6	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	47	0	0	0	32	0	11	43	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	12	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall				No				No		No	No	
Maximum Recall				No				No		No	No	
Pedestrian Recall				No				No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	C	R	L	C
C, Cycle Length [s]		90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		35	35	35	36	36	36	7	47
g / C, Green / Cycle		0.39	0.39	0.39	0.40	0.40	0.40	0.08	0.52
(v / s)_i Volume / Saturation Flow Rate		0.34	0.34	0.31	0.31	0.31	0.31	0.07	0.39
s, saturation flow rate [veh/h]		1750	1750	1900	3800	1900	1900	3500	5700
c, Capacity [veh/h]		682	682	740	1514	757	757	276	2973
d1, Uniform Delay [s]		25.40	25.40	24.41	23.66	23.66	23.66	40.98	16.81
k, delay calibration		0.25	0.25	0.21	0.50	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		7.83	7.83	3.91	4.08	7.87	7.87	7.54	1.72
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.87	0.87	0.80	0.78	0.78	0.78	0.86	0.74
d, Delay for Lane Group [s/veh]		33.23	33.23	28.32	27.74	31.52	31.52	48.51	18.53
Lane Group LOS		C	C	C	C	C	C	D	B
Critical Lane Group		Yes	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]		12.62	12.62	11.51	11.29	12.08	12.08	2.84	11.36
50th-Percentile Queue Length [ft/ln]		315.47	315.47	287.65	282.20	302.11	302.11	71.00	283.99
95th-Percentile Queue Length [veh/ln]		18.44	18.44	17.07	16.80	17.79	17.79	5.11	16.89
95th-Percentile Queue Length [ft/ln]		461.12	461.12	426.73	419.95	444.64	444.64	127.80	422.18

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	33.23	0.00	28.32	0.00	28.14	31.52	48.51	18.53	0.00
Movement LOS				C		C		C	C	D	B	
d_A, Approach Delay [s/veh]	0.00			31.59			29.63			21.42		
Approach LOS	A			C			C			C		
d_I, Intersection Delay [s/veh]	27.12											
Intersection LOS	C											
Intersection V/C	0.838											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.122	2.519	0.000	0.000
Crosswalk LOS	B	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	955	622	866
d_b, Bicycle Delay [s]	45.01	12.28	21.37	14.46
l_b,int, Bicycle LOS Score for Intersection	4.132	4.500	2.861	2.903
Bicycle LOS	D	E	C	C

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 3: SR-57 NB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	28.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.852

Intersection Setup

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	1019	0	482	0	0	0	275	2399	0	0	1237	475
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1019	0	482	0	0	0	275	2399	0	0	1237	475
Peak Hour Factor	0.8940	1.0000	0.8940	1.0000	1.0000	1.0000	0.9710	0.9710	1.0000	1.0000	0.8830	0.8830
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	285	0	135	0	0	0	71	618	0	0	350	134
Total Analysis Volume [veh/h]	1140	0	539	0	0	0	283	2471	0	0	1401	538
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	0	0	0	0	0	5	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	6	0	0	0	0	0	6	6	0	0	6	0
Maximum Green [s]	30	0	0	0	0	0	30	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	74	0	0	0	0	0	15	36	0	0	21	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	14	0	0	0	0	0	0	16	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No						No	No			No	
Maximum Recall	No						No	No			No	
Pedestrian Recall	No						No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R		L	C	C	C	R
C, Cycle Length [s]	110	110		110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	42	42		11	60	46	46	46
g / C, Green / Cycle	0.38	0.38		0.10	0.55	0.41	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.33	0.28		0.08	0.43	0.26	0.26	0.26
s, saturation flow rate [veh/h]	3500	1900		3500	5700	3800	1900	1900
c, Capacity [veh/h]	1324	719		343	3129	1575	788	788
d1, Uniform Delay [s]	31.51	29.67		48.67	19.75	25.31	25.31	25.31
k, delay calibration	0.11	0.11		0.11	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.77	1.60		5.01	2.11	1.81	3.58	3.58
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.86	0.75		0.82	0.79	0.62	0.62	0.62
d, Delay for Lane Group [s/veh]	33.28	31.26		53.68	21.86	27.12	28.89	28.89
Lane Group LOS	C	C		D	C	C	C	C
Critical Lane Group	Yes	No		No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	13.94	12.44		4.04	16.46	10.16	10.55	10.55
50th-Percentile Queue Length [ft/ln]	348.49	310.94		100.94	411.52	253.97	263.68	263.68
95th-Percentile Queue Length [veh/ln]	20.06	18.22		7.27	23.11	15.39	15.87	15.87
95th-Percentile Queue Length [ft/ln]	501.56	455.54		181.70	577.86	384.65	396.83	396.83

Movement, Approach, & Intersection Results

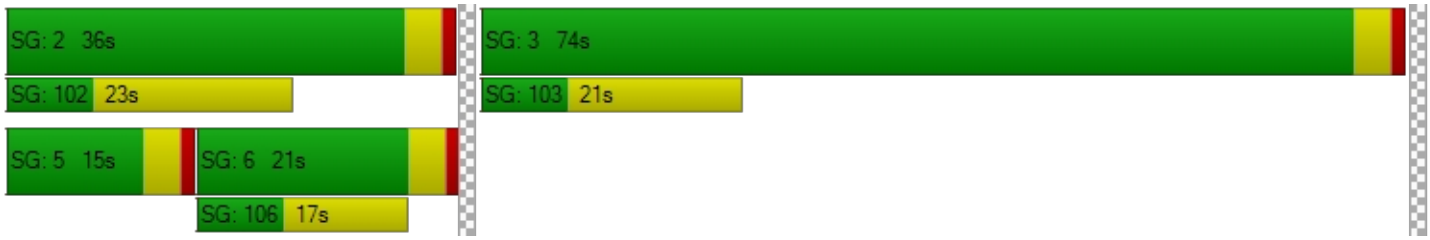
d_M, Delay for Movement [s/veh]	33.28	0.00	31.26	0.00	0.00	0.00	53.68	21.86	0.00	0.00	27.25	28.89
Movement LOS	C		C				D	C			C	C
d_A, Approach Delay [s/veh]	32.64			0.00			25.13			28.00		
Approach LOS	C			A			C			C		
d_I, Intersection Delay [s/veh]	27.98											
Intersection LOS	C											
Intersection V/C	0.852											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	44.54	44.54	0.00	44.54
l_p,int, Pedestrian LOS Score for Intersection	2.495	2.125	0.000	3.293
Crosswalk LOS	B	B	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1273	0	582	309
d_b, Bicycle Delay [s]	7.27	54.99	27.65	39.31
l_b,int, Bicycle LOS Score for Intersection	1.560	4.132	3.074	2.626
Bicycle LOS	A	D	C	B

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Randolph Avenue at Birch Street

Control Type:	Signalized	Delay (sec / veh):	14.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.356

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Base Volume Input [veh/h]	23	40	85	37	35	25	39	554	89	70	468	43
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	40	85	37	35	25	39	554	89	70	468	43
Peak Hour Factor	0.8140	0.8140	0.8140	0.7190	0.7190	0.7190	0.8220	0.8220	0.8220	0.8940	0.8940	0.8940
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	12	26	13	12	9	12	168	27	20	131	12
Total Analysis Volume [veh/h]	28	49	104	51	49	35	47	674	108	78	523	48
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	50	0	0	50	0	10	30	0	10	30	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	25	0	0	19	0	0	18	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	7	7	7	7	4	66	66	5	67	67
g / C, Green / Cycle	0.08	0.08	0.08	0.08	0.08	0.05	0.73	0.73	0.06	0.74	0.74
(v / s)_i Volume / Saturation Flow Rate	0.02	0.03	0.05	0.03	0.04	0.03	0.21	0.20	0.04	0.14	0.03
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1800	1900	1900	1800	3800	1900
c, Capacity [veh/h]	114	152	152	146	152	85	1384	1384	105	2810	1405
d1, Uniform Delay [s]	38.71	39.11	40.31	39.22	39.87	41.96	4.21	4.16	41.74	3.54	3.14
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.10	1.21	5.34	1.41	3.11	5.49	0.53	0.49	9.89	0.15	0.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.25	0.32	0.68	0.35	0.55	0.55	0.29	0.28	0.74	0.19	0.03
d, Delay for Lane Group [s/veh]	39.81	40.33	45.65	40.63	42.98	47.46	4.74	4.65	51.62	3.69	3.18
Lane Group LOS	D	D	D	D	D	D	A	A	D	A	A
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.61	1.06	2.44	1.11	1.90	1.14	2.17	2.05	1.97	1.15	0.20
50th-Percentile Queue Length [ft/ln]	15.19	26.59	61.01	27.85	47.51	28.53	54.33	51.13	49.35	28.78	4.88
95th-Percentile Queue Length [veh/ln]	1.09	1.91	4.39	2.01	3.42	2.05	3.91	3.68	3.55	2.07	0.35
95th-Percentile Queue Length [ft/ln]	27.34	47.87	109.81	50.14	85.53	51.35	97.80	92.04	88.84	51.80	8.79

Movement, Approach, & Intersection Results

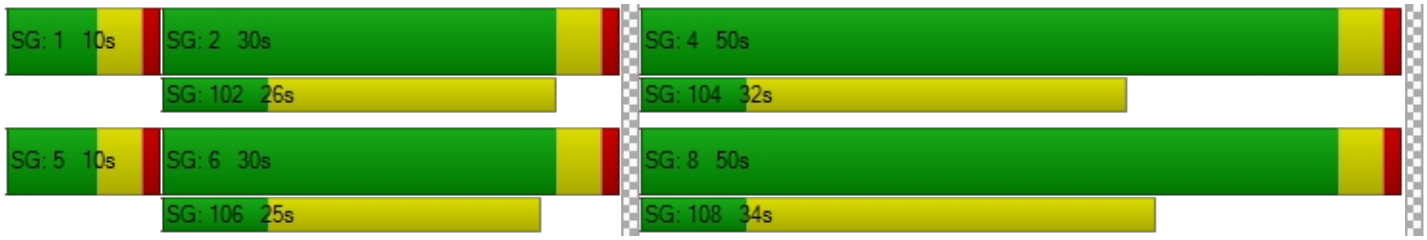
d_M, Delay for Movement [s/veh]	39.81	40.33	45.65	40.63	42.98	42.98	47.46	4.70	4.65	51.62	3.69	3.18
Movement LOS	D	D	D	D	D	D	D	A	A	D	A	A
d_A, Approach Delay [s/veh]	43.31			42.09			7.12			9.41		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	14.23											
Intersection LOS	B											
Intersection V/C	0.356											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	34.68	34.68
l_p,int, Pedestrian LOS Score for Intersection	2.232	2.030	2.615	2.765
Crosswalk LOS	B	B	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1022	1022	578	578
d_b, Bicycle Delay [s]	10.76	10.76	22.77	22.77
l_b,int, Bicycle LOS Score for Intersection	1.858	1.782	2.244	2.095
Bicycle LOS	A	A	B	B

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: State College Boulevard at Birch Street

Control Type:	Signalized	Delay (sec / veh):	37.6
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.597

Intersection Setup

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Base Volume Input [veh/h]	76	120	96	628	779	145	75	502	47	78	555	273
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	76	120	96	628	779	145	75	502	47	78	555	273
Peak Hour Factor	0.8430	0.8430	0.8430	0.8910	0.8910	0.8910	0.8600	0.8600	0.8600	0.7640	0.7640	0.7640
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	36	28	176	219	41	22	146	14	26	182	89
Total Analysis Volume [veh/h]	90	142	114	705	874	163	87	584	55	102	726	357
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	29	39	0	32	42	0	11	39	0	10	38	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	28	0	0	30	0	0	28	0	0	26	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	16	16	26	37	37	6	56	56	6	56	56
g / C, Green / Cycle	0.05	0.13	0.13	0.22	0.30	0.30	0.05	0.47	0.47	0.05	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.03	0.04	0.06	0.20	0.28	0.27	0.02	0.15	0.03	0.03	0.19	0.19
s, saturation flow rate [veh/h]	3500	3800	1900	3500	1900	1900	3500	3800	1900	3500	3800	1900
c, Capacity [veh/h]	169	507	253	768	579	579	168	1766	883	172	1770	885
d1, Uniform Delay [s]	55.81	46.83	47.96	45.81	40.10	39.78	55.79	20.32	17.71	55.91	21.17	21.09
k, delay calibration	0.11	0.11	0.11	0.11	0.16	0.15	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.59	0.30	1.25	5.00	7.82	6.34	2.45	0.50	0.14	3.24	0.70	1.37
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.53	0.28	0.45	0.92	0.91	0.89	0.52	0.33	0.06	0.59	0.41	0.40
d, Delay for Lane Group [s/veh]	58.39	47.13	49.21	50.81	47.92	46.12	58.24	20.82	17.84	59.15	21.87	22.45
Lane Group LOS	E	D	D	D	D	D	E	C	B	E	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.39	1.94	3.24	10.75	15.95	15.30	1.35	5.27	0.88	1.59	6.86	6.88
50th-Percentile Queue Length [ft/ln]	34.84	48.51	81.10	268.77	398.70	382.39	33.63	131.86	21.97	39.80	171.42	172.09
95th-Percentile Queue Length [veh/ln]	2.51	3.49	5.84	16.13	22.50	21.71	2.42	9.04	1.58	2.87	11.15	11.19
95th-Percentile Queue Length [ft/ln]	62.72	87.31	145.97	403.21	562.43	542.74	60.53	226.03	39.55	71.64	278.78	279.66

Movement, Approach, & Intersection Results

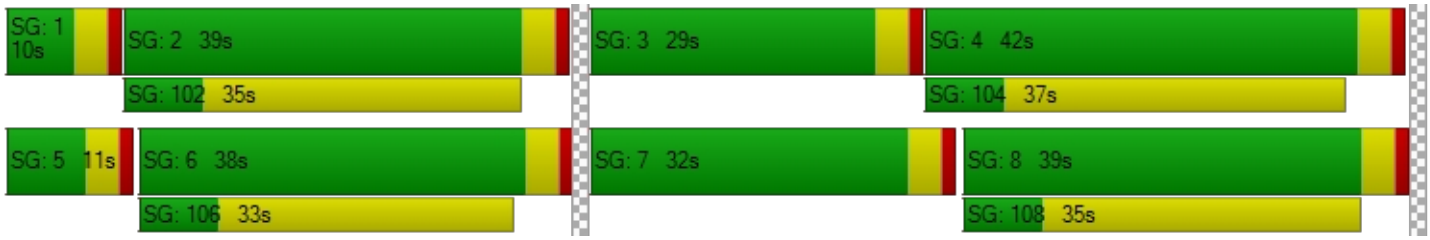
d_M, Delay for Movement [s/veh]	58.39	47.13	49.21	50.81	47.20	46.12	58.24	20.82	17.84	59.15	21.87	22.45
Movement LOS	E	D	D	D	D	D	E	C	B	E	C	C
d_A, Approach Delay [s/veh]	50.75			48.56			25.08			25.26		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	37.58											
Intersection LOS	D											
Intersection V/C	0.597											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.52	49.52	49.52	49.52
l_p,int, Pedestrian LOS Score for Intersection	2.799	2.845	2.845	2.968
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	583	633	583	567
d_b, Bicycle Delay [s]	30.12	28.03	30.12	30.83
l_b,int, Bicycle LOS Score for Intersection	1.845	2.997	2.159	2.537
Bicycle LOS	A	C	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: S Associated Road at Birch Street

Control Type:	Signalized	Delay (sec / veh):	26.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.765

Intersection Setup

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Base Volume Input [veh/h]	234	6	307	55	28	8	2	909	302	341	747	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	234	6	307	55	28	8	2	909	302	341	747	11
Peak Hour Factor	0.8160	0.8160	0.8160	0.7410	0.7410	0.7410	0.8560	0.8560	0.8560	0.9140	0.9140	0.9140
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	72	2	94	19	9	3	1	265	88	93	204	3
Total Analysis Volume [veh/h]	287	7	376	74	38	11	2	1062	353	373	817	12
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	8	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups			1,8									
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	6	0	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	30	0	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	20	57	57	0	37	0	10	38	0	20	48	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	26	26	0	26	0	0	27	0	0	26	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No		No		No	No		No	No	
Maximum Recall	No	No	No		No		No	No		No	No	
Pedestrian Recall	No	No	No		No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	C
C, Cycle Length [s]	115	115	115	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	22	42	7	7	0	65	65	16	80	80
g / C, Green / Cycle	0.10	0.19	0.37	0.06	0.06	0.00	0.56	0.56	0.14	0.70	0.70
(v / s)_i Volume / Saturation Flow Rate	0.08	0.00	0.20	0.04	0.03	0.00	0.39	0.36	0.11	0.22	0.22
s, saturation flow rate [veh/h]	3500	1900	1900	1800	1900	1800	1900	1900	3500	1900	1900
c, Capacity [veh/h]	355	371	702	137	112	8	1066	1066	488	1323	1323
d1, Uniform Delay [s]	50.61	37.41	28.53	53.13	52.30	57.12	18.04	17.31	47.69	6.79	6.78
k, delay calibration	0.11	0.11	0.27	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.40	0.02	1.61	3.30	2.66	17.13	3.61	2.95	2.52	0.62	0.62
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.81	0.02	0.54	0.54	0.44	0.26	0.69	0.64	0.76	0.31	0.31
d, Delay for Lane Group [s/veh]	55.01	37.43	30.13	56.44	54.96	74.25	21.65	20.26	50.22	7.42	7.40
Lane Group LOS	E	D	C	E	D	E	C	C	D	A	A
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.26	0.16	8.42	2.22	1.45	0.09	14.31	12.73	5.31	3.84	3.81
50th-Percentile Queue Length [ft/ln]	106.40	4.07	210.49	55.61	36.27	2.36	357.81	318.15	132.76	95.93	95.34
95th-Percentile Queue Length [veh/ln]	7.64	0.29	13.18	4.00	2.61	0.17	20.52	18.58	9.09	6.91	6.86
95th-Percentile Queue Length [ft/ln]	190.98	7.32	329.45	100.09	65.29	4.25	512.92	464.41	227.24	172.68	171.61

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	55.01	37.43	30.13	56.44	54.96	54.96	74.25	21.22	20.26	50.22	7.41	7.40
Movement LOS	E	D	C	E	D	D	E	C	C	D	A	A
d_A, Approach Delay [s/veh]	40.86			55.85			21.05			20.69		
Approach LOS	D			E			C			C		
d_I, Intersection Delay [s/veh]	26.07											
Intersection LOS	C											
Intersection V/C	0.765											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	47.05	47.05	47.05	47.05
l_p,int, Pedestrian LOS Score for Intersection	2.698	1.999	2.805	3.011
Crosswalk LOS	B	A	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	921	574	591	765
d_b, Bicycle Delay [s]	16.73	29.25	28.54	21.93
l_b,int, Bicycle LOS Score for Intersection	2.665	1.763	2.729	2.551
Bicycle LOS	B	A	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 7: Randolph Avenue at Madison Way

Control Type:	Signalized	Delay (sec / veh):	17.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.140

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Base Volume Input [veh/h]	25	130	8	6	119	14	32	2	57	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	25	130	8	6	119	14	32	2	57	0	0	0
Peak Hour Factor	0.9010	0.9010	0.9010	0.6500	0.6500	0.6500	0.5970	0.5970	0.5970	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	36	2	2	46	5	13	1	24	0	0	0
Total Analysis Volume [veh/h]	28	144	9	9	183	22	54	3	95	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	6	6	0	6	6	0	0	6	0	0	6	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	26	0	10	26	0	0	54	0	0	54	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	15	0	0	12	0	0	19	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	70	70	1	68	68	7	7	7	7
g / C, Green / Cycle	0.03	0.78	0.78	0.01	0.76	0.76	0.07	0.07	0.07	0.07
(v / s)_i Volume / Saturation Flow Rate	0.02	0.04	0.04	0.01	0.05	0.05	0.03	0.05	0.00	0.00
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1900	1800	1900	1800	1900
c, Capacity [veh/h]	63	1476	1476	26	1438	1438	181	143	92	143
d1, Uniform Delay [s]	42.61	2.34	2.34	43.93	2.82	2.82	39.69	40.59	0.00	0.00
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.92	0.07	0.07	7.37	0.10	0.10	0.91	5.68	0.00	0.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.45	0.05	0.05	0.34	0.07	0.07	0.30	0.69	0.00	0.00
d, Delay for Lane Group [s/veh]	47.53	2.41	2.40	51.30	2.92	2.91	40.60	46.28	0.00	0.00
Lane Group LOS	D	A	A	D	A	A	D	D	A	A
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.69	0.24	0.24	0.25	0.39	0.38	1.17	2.32	0.00	0.00
50th-Percentile Queue Length [ft/ln]	17.26	6.03	5.99	6.28	9.64	9.49	29.33	57.96	0.00	0.00
95th-Percentile Queue Length [veh/ln]	1.24	0.43	0.43	0.45	0.69	0.68	2.11	4.17	0.00	0.00
95th-Percentile Queue Length [ft/ln]	31.07	10.86	10.78	11.30	17.35	17.08	52.79	104.32	0.00	0.00

Movement, Approach, & Intersection Results

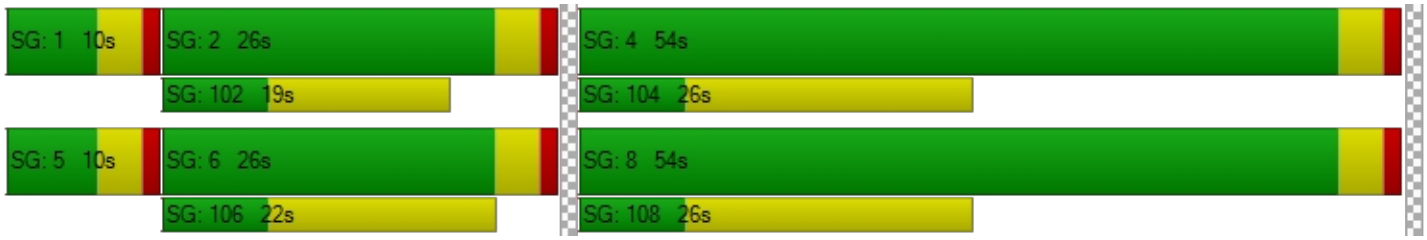
d_M, Delay for Movement [s/veh]	47.53	2.41	2.40	51.30	2.91	2.91	40.60	46.28	46.28	0.00	0.00	0.00
Movement LOS	D	A	A	D	A	A	D	D	D	A	A	A
d_A, Approach Delay [s/veh]	9.39			4.95			44.26			0.00		
Approach LOS	A			A			D			A		
d_I, Intersection Delay [s/veh]	17.34											
Intersection LOS	B											
Intersection V/C	0.140											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	34.68	34.68
l_p,int, Pedestrian LOS Score for Intersection	2.389	2.457	2.005	1.947
Crosswalk LOS	B	B	B	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	489	489	1111	1111
d_b, Bicycle Delay [s]	25.70	25.70	8.90	8.90
l_b,int, Bicycle LOS Score for Intersection	1.709	1.736	1.810	1.560
Bicycle LOS	A	A	A	A

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 8: Randolph Avenue at Brea Mall

Control Type:	Signalized	Delay (sec / veh):	8.2
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.106

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Base Volume Input [veh/h]	13	163	66	15	141	6	1	0	1	26	0	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	13	163	66	15	141	6	1	0	1	26	0	5
Peak Hour Factor	0.8280	0.8280	0.8280	0.9050	0.9050	0.9050	0.2500	0.2500	0.2500	0.6000	0.6000	0.6000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	49	20	4	39	2	1	0	1	11	0	2
Total Analysis Volume [veh/h]	16	197	80	17	156	7	4	0	4	43	0	8
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	6	6	0	6	6	0	0	6	0	0	6	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	30	0	10	30	0	0	30	0	0	30	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	17	0	0	18	0	0	19	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	R	L	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	82	76	76	82	76	76	1	1	5	5
g / C, Green / Cycle	0.82	0.76	0.76	0.82	0.76	0.76	0.01	0.01	0.05	0.05
(v / s)_i Volume / Saturation Flow Rate	0.01	0.07	0.07	0.01	0.04	0.04	0.00	0.00	0.01	0.01
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1900	1800	1900	1800	1900
c, Capacity [veh/h]	1558	1441	1441	1541	1443	1443	23	24	83	87
d1, Uniform Delay [s]	1.61	3.16	3.15	1.61	3.03	3.03	48.89	48.89	46.19	46.15
k, delay calibration	0.11	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.00	0.14	0.13	0.01	0.07	0.07	3.66	3.25	2.09	1.81
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.01	0.10	0.09	0.01	0.06	0.06	0.18	0.17	0.31	0.29
d, Delay for Lane Group [s/veh]	1.61	3.30	3.28	1.62	3.10	3.10	52.55	52.14	48.28	47.96
Lane Group LOS	A	A	A	A	A	A	D	D	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.03	0.64	0.60	0.04	0.35	0.35	0.12	0.12	0.66	0.65
50th-Percentile Queue Length [ft/ln]	0.86	15.99	15.12	1.02	8.82	8.77	3.04	3.00	16.54	16.31
95th-Percentile Queue Length [veh/ln]	0.06	1.15	1.09	0.07	0.63	0.63	0.22	0.22	1.19	1.17
95th-Percentile Queue Length [ft/ln]	1.55	28.79	27.21	1.84	15.87	15.79	5.46	5.40	29.78	29.36

Movement, Approach, & Intersection Results

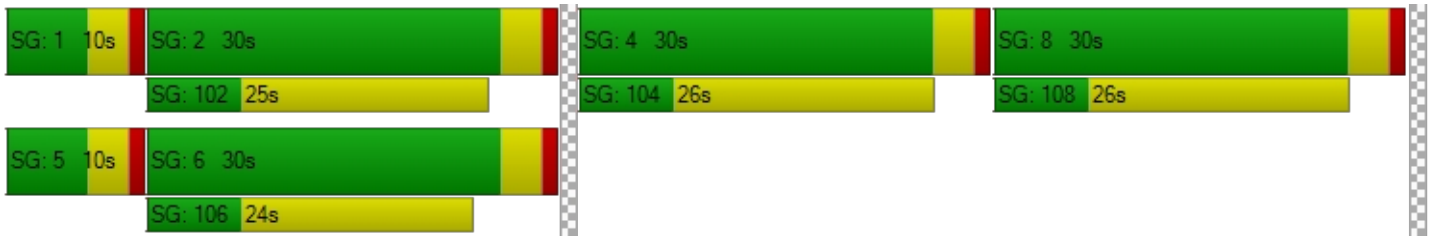
d_M, Delay for Movement [s/veh]	1.61	3.29	3.28	1.62	3.10	3.10	52.55	52.55	52.14	48.15	47.96	47.96
Movement LOS	A	A	A	A	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	3.19			2.96			52.34			48.12		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	8.16											
Intersection LOS	A											
Intersection V/C	0.106											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	39.62	39.62	39.62	39.62
l_p,int, Pedestrian LOS Score for Intersection	2.401	2.381	1.973	2.012
Crosswalk LOS	B	B	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	520	520	520	520
d_b, Bicycle Delay [s]	27.40	27.40	27.40	27.40
l_b,int, Bicycle LOS Score for Intersection	1.801	1.708	1.573	1.644
Bicycle LOS	A	A	A	A

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 9: Brea Mall South at State College Boulevard

Control Type:	Signalized	Delay (sec / veh):	15.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.205

Intersection Setup

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Base Volume Input [veh/h]	32	5	15	3	2	27	77	238	15	27	319	12
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	32	5	15	3	2	27	77	238	15	27	319	12
Peak Hour Factor	0.5830	0.5830	0.5830	0.5500	0.5500	0.5500	0.8240	0.8240	0.8240	0.9420	0.9420	0.9420
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	2	6	1	1	12	23	72	5	7	85	3
Total Analysis Volume [veh/h]	55	9	26	5	4	49	93	289	18	29	339	13
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	4	5	2	0	1	6	0
Auxiliary Signal Groups						4,5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	6	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	30	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	37	0	0	10	10	11	33	0	10	32	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	26	0	0	0	0	0	20	0	0	21	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No	No	No	No		No	No	
Maximum Recall		No			No	No	No	No		No	No	
Pedestrian Recall		No			No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	C	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	5	5	5	5	24	5	61	61	3	59	59
g / C, Green / Cycle	0.06	0.06	0.06	0.05	0.05	0.26	0.06	0.68	0.68	0.04	0.65	0.65
(v / s)_i Volume / Saturation Flow Rate	0.01	0.03	0.01	0.00	0.00	0.03	0.03	0.08	0.08	0.02	0.09	0.09
s, saturation flow rate [veh/h]	1800	1800	1900	1800	1900	1900	3500	1900	1900	1800	1900	1900
c, Capacity [veh/h]	155	181	116	94	99	500	215	1280	1280	64	1232	1232
d1, Uniform Delay [s]	40.17	40.82	40.33	40.61	40.58	25.13	40.82	5.23	5.22	42.61	6.15	6.15
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.33	0.73	0.98	0.23	0.16	0.08	1.38	0.19	0.19	4.85	0.24	0.24
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.11	0.25	0.23	0.05	0.04	0.10	0.43	0.12	0.12	0.45	0.14	0.14
d, Delay for Lane Group [s/veh]	40.50	41.55	41.30	40.84	40.74	25.22	42.20	5.42	5.41	47.45	6.40	6.39
Lane Group LOS	D	D	D	D	D	C	D	A	A	D	A	A
Critical Lane Group	No	Yes	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.39	1.01	0.58	0.11	0.09	0.80	1.03	0.95	0.94	0.71	1.23	1.22
50th-Percentile Queue Length [ft/ln]	9.65	25.36	14.38	2.76	2.20	19.91	25.65	23.75	23.40	17.84	30.74	30.46
95th-Percentile Queue Length [veh/ln]	0.69	1.83	1.04	0.20	0.16	1.43	1.85	1.71	1.69	1.28	2.21	2.19
95th-Percentile Queue Length [ft/ln]	17.36	45.64	25.88	4.98	3.96	35.83	46.18	42.75	42.13	32.10	55.33	54.83

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.18	41.55	41.30	40.84	40.74	25.22	42.20	5.42	5.41	47.45	6.40	6.39
Movement LOS	D	D	D	D	D	C	D	A	A	D	A	A
d_A, Approach Delay [s/veh]	41.27			27.63			13.97			9.52		
Approach LOS	D			C			B			A		
d_I, Intersection Delay [s/veh]	15.64											
Intersection LOS	B											
Intersection V/C	0.205											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.72	34.72	0.00	34.72
l_p,int, Pedestrian LOS Score for Intersection	2.327	2.333	0.000	2.436
Crosswalk LOS	B	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	733	133	644	622
d_b, Bicycle Delay [s]	18.09	39.24	20.71	21.40
l_b,int, Bicycle LOS Score for Intersection	1.708	1.607	1.890	1.874
Bicycle LOS	A	A	A	A

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 10: Harbor Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	40.4
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.871

Intersection Setup

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	302	601	259	143	1241	279	183	1296	361	282	1143	99
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	302	601	259	143	1241	279	183	1296	361	282	1143	99
Peak Hour Factor	0.8230	0.8230	0.8230	0.9630	0.9630	0.9630	0.8630	0.8630	0.8630	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	92	183	79	37	322	72	53	375	105	72	292	25
Total Analysis Volume [veh/h]	367	730	315	148	1289	290	212	1502	418	288	1166	101
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	18	46	0	11	39	0	13	48	0	15	50	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	31	0	0	28	0	0	31	0	0	29	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	39	39	7	31	31	9	47	47	11	49	49
g / C, Green / Cycle	0.12	0.32	0.32	0.06	0.26	0.26	0.08	0.40	0.40	0.09	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.10	0.13	0.17	0.04	0.23	0.15	0.06	0.34	0.33	0.08	0.20	0.05
s, saturation flow rate [veh/h]	3500	5700	1900	3500	5700	1900	3500	3800	1900	3500	5700	1900
c, Capacity [veh/h]	410	1827	609	205	1493	498	265	1503	751	323	2349	783
d1, Uniform Delay [s]	52.27	31.79	33.23	55.56	42.26	38.60	54.60	33.30	32.64	53.90	26.09	21.91
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.05	0.14	0.68	4.77	1.61	1.09	5.56	6.79	10.26	8.48	0.75	0.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.90	0.40	0.52	0.72	0.86	0.58	0.80	0.86	0.83	0.89	0.50	0.13
d, Delay for Lane Group [s/veh]	59.33	31.93	33.91	60.33	43.87	39.68	60.16	40.10	42.90	62.38	26.84	22.25
Lane Group LOS	E	C	C	E	D	D	E	D	D	E	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.85	5.54	7.57	2.34	12.28	7.58	3.36	18.42	18.15	4.68	8.33	1.86
50th-Percentile Queue Length [ft/ln]	146.16	138.42	189.36	58.48	306.92	189.51	83.94	460.50	453.80	116.96	208.28	46.43
95th-Percentile Queue Length [veh/ln]	9.81	9.40	12.09	4.21	18.02	12.10	6.04	25.46	25.14	8.23	13.07	3.34
95th-Percentile Queue Length [ft/ln]	245.29	234.89	302.20	105.26	450.58	302.40	151.10	636.47	628.48	205.64	326.63	83.57

Movement, Approach, & Intersection Results

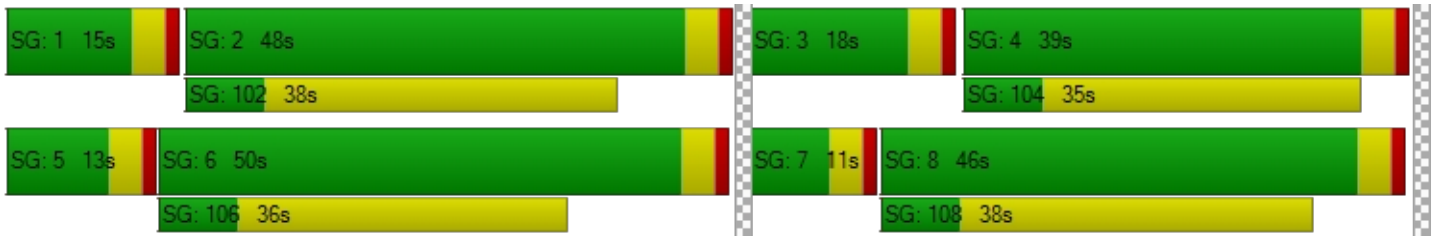
d_M, Delay for Movement [s/veh]	59.33	31.93	33.91	60.33	43.87	39.68	60.16	40.48	42.90	62.38	26.84	22.25
Movement LOS	E	C	C	E	D	D	E	D	D	E	C	C
d_A, Approach Delay [s/veh]	39.49			44.58			42.91			33.12		
Approach LOS	D			D			D			C		
d_I, Intersection Delay [s/veh]	40.40											
Intersection LOS	D											
Intersection V/C	0.871											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.52	49.52	49.52	49.52
l_p,int, Pedestrian LOS Score for Intersection	3.232	3.163	3.221	3.244
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	700	583	733	766
d_b, Bicycle Delay [s]	25.36	30.12	24.08	22.83
l_b,int, Bicycle LOS Score for Intersection	2.336	2.509	2.732	2.415
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 11: Puente Street at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	18.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.514

Intersection Setup

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	59	113	152	120	84	133	218	1314	78	48	1195	156
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	59	113	152	120	84	133	218	1314	78	48	1195	156
Peak Hour Factor	0.8950	0.8950	0.8950	0.8510	0.8510	0.8510	0.8710	0.8710	0.8710	0.9670	0.9670	0.9670
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	32	42	35	25	39	63	377	22	12	309	40
Total Analysis Volume [veh/h]	66	126	170	141	99	156	250	1509	90	50	1236	161
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	39	0	0	39	0	17	31	0	20	34	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	23	0	0	17	0	0	23	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	11	11	11	11	11	13	63	63	4	54	54
g / C, Green / Cycle	0.12	0.12	0.12	0.12	0.12	0.12	0.14	0.70	0.70	0.05	0.60	0.60
(v / s)_i Volume / Saturation Flow Rate	0.04	0.07	0.09	0.08	0.03	0.08	0.14	0.28	0.28	0.03	0.22	0.08
s, saturation flow rate [veh/h]	1800	1900	1900	1800	3800	1900	1800	3800	1900	1800	5700	1900
c, Capacity [veh/h]	216	225	225	146	450	225	261	2659	1329	88	3439	1146
d1, Uniform Delay [s]	36.33	37.48	38.43	37.97	35.93	38.12	38.21	5.63	5.68	41.91	9.05	7.74
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.79	2.18	5.11	27.06	0.24	3.81	17.46	0.45	0.93	5.70	0.29	0.26
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.31	0.56	0.76	0.97	0.22	0.69	0.96	0.40	0.41	0.57	0.36	0.14
d, Delay for Lane Group [s/veh]	37.12	39.66	43.55	65.03	36.17	41.93	55.67	6.08	6.61	47.61	9.34	8.00
Lane Group LOS	D	D	D	E	D	D	E	A	A	D	A	A
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.36	2.72	3.90	4.03	0.99	3.50	6.64	3.54	3.83	1.21	3.79	1.32
50th-Percentile Queue Length [ft/ln]	34.02	68.07	97.46	100.77	24.74	87.40	165.95	88.56	95.64	30.37	94.70	32.92
95th-Percentile Queue Length [veh/ln]	2.45	4.90	7.02	7.26	1.78	6.29	10.86	6.38	6.89	2.19	6.82	2.37
95th-Percentile Queue Length [ft/ln]	61.24	122.53	175.43	181.38	44.53	157.31	271.59	159.41	172.16	54.67	170.45	59.26

Movement, Approach, & Intersection Results

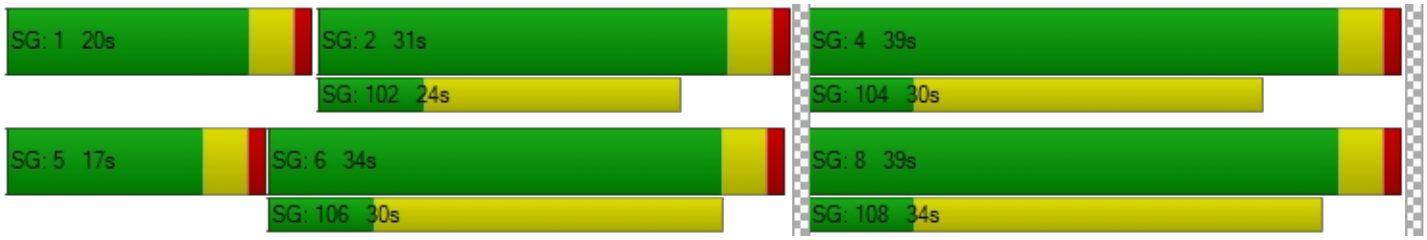
d_M, Delay for Movement [s/veh]	37.12	39.66	43.55	65.03	36.17	41.93	55.67	6.24	6.61	47.61	9.34	8.00
Movement LOS	D	D	D	E	D	D	E	A	A	D	A	A
d_A, Approach Delay [s/veh]	41.02			48.72			12.94			10.52		
Approach LOS	D			D			B			B		
d_I, Intersection Delay [s/veh]	18.08											
Intersection LOS	B											
Intersection V/C	0.514											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	34.68	34.68
l_p,int, Pedestrian LOS Score for Intersection	2.417	2.481	3.148	3.324
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	778	778	600	666
d_b, Bicycle Delay [s]	16.82	16.82	22.06	20.01
l_b,int, Bicycle LOS Score for Intersection	2.157	1.886	2.577	2.355
Bicycle LOS	B	A	B	B

Sequence

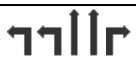
Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: Brea Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	40.2
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.860

Intersection Setup

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	426	452	142	126	944	163	130	1478	345	150	1409	63
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	426	452	142	126	944	163	130	1478	345	150	1409	63
Peak Hour Factor	0.7960	0.7960	0.7960	0.9500	0.9500	0.9500	0.9210	0.9210	0.9210	0.8690	0.8690	0.8690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	134	142	45	33	248	43	35	401	94	43	405	18
Total Analysis Volume [veh/h]	535	568	178	133	994	172	141	1605	375	173	1621	72
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	25	57	0	11	43	0	10	41	0	11	42	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	30	0	0	28	0	0	30	0	0	30	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	20	48	48	7	35	35	6	42	42	7	43	43
g / C, Green / Cycle	0.17	0.40	0.40	0.05	0.29	0.29	0.05	0.35	0.35	0.06	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.15	0.10	0.09	0.04	0.26	0.09	0.04	0.28	0.20	0.05	0.28	0.04
s, saturation flow rate [veh/h]	3500	5700	1900	3500	3800	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	592	2298	766	192	1098	549	180	1989	663	209	2036	679
d1, Uniform Delay [s]	48.94	23.76	23.61	55.76	41.13	33.39	56.30	35.44	31.72	55.86	34.68	25.80
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.46	0.06	0.15	4.40	3.16	0.32	7.21	3.63	3.47	8.05	3.33	0.31
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.90	0.25	0.23	0.69	0.91	0.31	0.78	0.81	0.57	0.83	0.80	0.11
d, Delay for Lane Group [s/veh]	54.39	23.82	23.76	60.17	44.29	33.72	63.52	39.07	35.19	63.91	38.01	26.11
Lane Group LOS	D	C	C	E	D	C	E	D	D	E	D	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	8.29	3.59	3.37	2.10	14.50	3.99	2.29	14.67	9.42	2.83	14.61	1.45
50th-Percentile Queue Length [ft/ln]	207.27	89.69	84.31	52.46	362.49	99.70	57.36	366.73	235.59	70.68	365.37	36.14
95th-Percentile Queue Length [veh/ln]	13.01	6.46	6.07	3.78	20.74	7.18	4.13	20.95	14.46	5.09	20.88	2.60
95th-Percentile Queue Length [ft/ln]	325.32	161.45	151.76	94.43	518.61	179.47	103.24	523.76	361.45	127.22	522.11	65.05

Movement, Approach, & Intersection Results

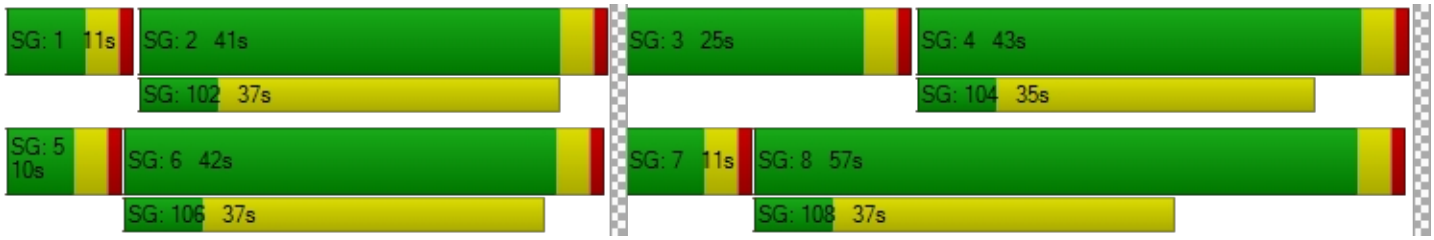
d_M, Delay for Movement [s/veh]	54.39	23.82	23.76	60.17	44.29	33.72	63.52	39.07	35.19	63.91	38.01	26.11
Movement LOS	D	C	C	E	D	C	E	D	D	E	D	C
d_A, Approach Delay [s/veh]	36.58			44.51			40.01			39.96		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	40.22											
Intersection LOS	D											
Intersection V/C	0.860											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.54	49.54	49.54	49.54
l_p,int, Pedestrian LOS Score for Intersection	3.083	2.993	3.345	3.273
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	883	650	616	633
d_b, Bicycle Delay [s]	18.73	27.37	28.73	28.04
l_b,int, Bicycle LOS Score for Intersection	2.264	2.631	2.726	2.586
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 13: Randolph Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	12.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.481

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	15	14	53	125	14	29	58	1516	9	24	1466	143
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	14	53	125	14	29	58	1516	9	24	1466	143
Peak Hour Factor	0.7700	0.7700	0.7700	0.8070	0.8070	0.8070	0.8950	0.8950	0.8950	0.8510	0.8510	0.8510
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	5	17	39	4	9	16	423	3	7	431	42
Total Analysis Volume [veh/h]	19	18	69	155	17	36	65	1694	10	28	1723	168
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	10	0	0	40	0	10	40	0	10	40	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	29	0	0	28	0	0	29	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	6	6	7	7	5	68	68	3	66	66
g / C, Green / Cycle	0.06	0.06	0.06	0.07	0.07	0.05	0.68	0.68	0.03	0.66	0.66
(v / s)_i Volume / Saturation Flow Rate	0.01	0.01	0.04	0.04	0.03	0.02	0.29	0.31	0.02	0.30	0.09
s, saturation flow rate [veh/h]	1800	1800	1900	3500	1900	3500	3800	1900	1800	5700	1900
c, Capacity [veh/h]	104	104	110	243	132	179	2582	1291	61	3772	1257
d1, Uniform Delay [s]	44.92	44.90	46.12	45.37	44.61	45.93	7.29	7.44	47.50	8.21	6.28
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.83	0.78	5.79	2.78	1.97	1.23	0.53	1.15	5.40	0.40	0.22
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.18	0.17	0.63	0.64	0.40	0.36	0.43	0.45	0.46	0.46	0.13
d, Delay for Lane Group [s/veh]	45.76	45.68	51.91	48.15	46.57	47.16	7.82	8.59	52.90	8.61	6.50
Lane Group LOS	D	D	D	D	D	D	A	A	D	A	A
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.47	0.45	1.85	1.96	1.33	0.81	4.94	5.48	0.77	5.47	1.27
50th-Percentile Queue Length [ft/ln]	11.80	11.16	46.16	48.96	33.15	20.22	123.40	137.09	19.33	136.83	31.78
95th-Percentile Queue Length [veh/ln]	0.85	0.80	3.32	3.53	2.39	1.46	8.58	9.32	1.39	9.31	2.29
95th-Percentile Queue Length [ft/ln]	21.23	20.09	83.08	88.13	59.66	36.40	214.49	233.11	34.80	232.75	57.20

Movement, Approach, & Intersection Results

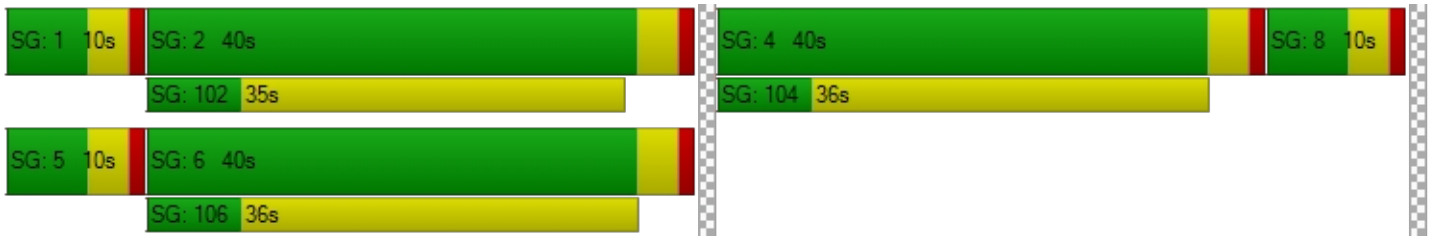
d_M, Delay for Movement [s/veh]	45.76	45.68	51.91	48.15	46.57	46.57	47.16	8.09	8.59	52.90	8.61	6.50
Movement LOS	D	D	D	D	D	D	D	A	A	D	A	A
d_A, Approach Delay [s/veh]	49.75			47.75			9.52			9.07		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	12.36											
Intersection LOS	B											
Intersection V/C	0.481											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	39.64	39.64	39.64	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.175	2.394	3.163	0.000
Crosswalk LOS	B	B	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	120	719	719	719
d_b, Bicycle Delay [s]	44.22	20.51	20.51	20.51
l_b,int, Bicycle LOS Score for Intersection	1.647	1.903	2.533	2.615
Bicycle LOS	A	A	B	B

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 14: State College Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	30.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.781

Intersection Setup

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	97	137	397	84	341	26	33	1518	171	431	1517	134
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	97	137	397	84	341	26	33	1518	171	431	1517	134
Peak Hour Factor	0.9050	0.9050	0.9050	0.9420	0.9420	0.9420	0.9090	0.9090	0.9090	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	38	110	22	90	7	9	417	47	120	421	37
Total Analysis Volume [veh/h]	107	151	439	89	362	28	36	1670	188	479	1686	149
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	12	41	0	10	39	0	15	34	0	20	39	39
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	30	0	0	28	0	0	23	0	0	23	23
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	105	105	105	105	105	105	105	105	105	105	105	105
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	6	27	27	6	27	27	4	40	40	16	52	62
g / C, Green / Cycle	0.06	0.26	0.26	0.06	0.26	0.26	0.04	0.38	0.38	0.15	0.50	0.59
(v / s)_i Volume / Saturation Flow Rate	0.03	0.04	0.23	0.04	0.10	0.10	0.01	0.24	0.25	0.14	0.30	0.08
s, saturation flow rate [veh/h]	3500	3800	1900	2000	1900	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	194	972	486	116	491	491	134	2173	724	535	2826	1124
d1, Uniform Delay [s]	48.36	30.31	37.85	48.82	32.25	32.18	49.12	26.57	26.83	43.71	18.98	9.51
k, delay calibration	0.11	0.11	0.21	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.42	0.07	11.31	10.11	0.53	0.51	1.07	1.44	4.59	5.60	0.94	0.24
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.55	0.16	0.90	0.77	0.40	0.39	0.27	0.64	0.66	0.90	0.60	0.13
d, Delay for Lane Group [s/veh]	50.79	30.38	49.16	58.92	32.78	32.70	50.19	28.01	31.42	49.32	19.92	9.75
Lane Group LOS	D	C	D	E	C	C	D	C	C	D	B	A
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.43	1.49	12.28	1.31	4.19	4.10	0.48	9.52	10.51	6.48	9.67	1.53
50th-Percentile Queue Length [ft/ln]	35.70	37.27	307.01	32.73	104.80	102.61	11.95	237.95	262.85	161.95	241.67	38.35
95th-Percentile Queue Length [veh/ln]	2.57	2.68	18.03	2.36	7.55	7.39	0.86	14.58	15.83	10.65	14.77	2.76
95th-Percentile Queue Length [ft/ln]	64.26	67.08	450.68	58.92	188.64	184.69	21.51	364.45	395.80	266.30	369.14	69.02

Movement, Approach, & Intersection Results

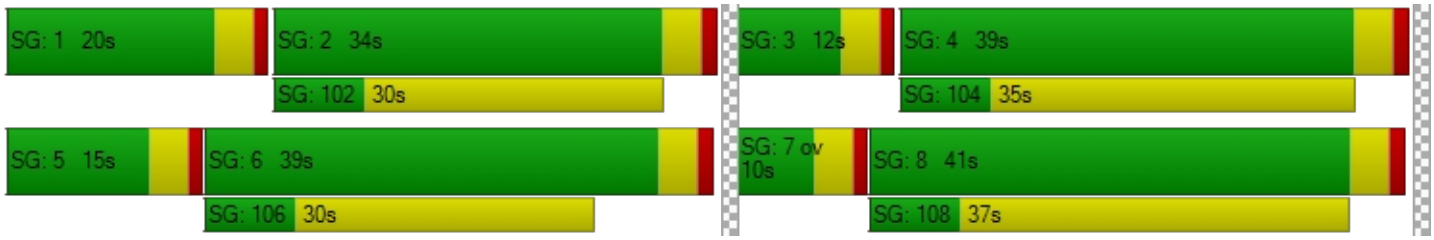
d_M, Delay for Movement [s/veh]	50.79	30.38	49.16	58.92	32.74	32.70	50.19	28.60	31.42	49.32	19.92	9.75
Movement LOS	D	C	D	E	C	C	D	C	C	D	B	A
d_A, Approach Delay [s/veh]	45.34			37.61			29.29			25.35		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	30.41											
Intersection LOS	C											
Intersection V/C	0.781											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	42.11	42.11	42.11	42.11
l_p,int, Pedestrian LOS Score for Intersection	2.842	2.593	3.259	3.414
Crosswalk LOS	C	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	704	666	571	666
d_b, Bicycle Delay [s]	22.05	23.36	26.81	23.36
l_b,int, Bicycle LOS Score for Intersection	2.135	1.955	2.341	2.832
Bicycle LOS	B	A	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 15: SR-57 SB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	15.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.582

Intersection Setup

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	0	0	0	574	0	460	0	1410	639	0	1645	180
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	574	0	460	0	1410	639	0	1645	180
Peak Hour Factor	1.0000	1.0000	1.0000	0.8810	1.0000	0.8810	1.0000	0.9270	0.9270	1.0000	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	163	0	131	0	380	172	0	438	48
Total Analysis Volume [veh/h]	0	0	0	652	0	522	0	1521	689	0	1750	191
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	7	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	6	0	0	0	6	0	0	6	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	64	0	0	0	26	0	0	26	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	15	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	C
C, Cycle Length [s]		90	90	90	90	90
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		24	24	24	58	58
g / C, Green / Cycle		0.27	0.27	0.27	0.64	0.64
(v / s)_i Volume / Saturation Flow Rate		0.22	0.22	0.21	0.27	0.31
s, saturation flow rate [veh/h]		1750	1750	1900	5700	5700
c, Capacity [veh/h]		471	471	512	3657	3657
d1, Uniform Delay [s]		30.88	30.88	30.20	7.87	8.33
k, delay calibration		0.11	0.11	0.11	0.50	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		3.84	3.84	2.41	0.35	0.45
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.83	0.83	0.76	0.42	0.48
d, Delay for Lane Group [s/veh]		34.72	34.72	32.61	8.22	8.78
Lane Group LOS		C	C	C	A	A
Critical Lane Group		Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]		8.24	8.24	7.91	4.32	5.27
50th-Percentile Queue Length [ft/ln]		206.00	206.00	197.71	108.07	131.76
95th-Percentile Queue Length [veh/ln]		12.95	12.95	12.52	7.73	9.04
95th-Percentile Queue Length [ft/ln]		323.69	323.69	313.01	193.32	225.89

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	34.72	0.00	33.14	0.00	8.22	0.00	0.00	8.78	0.00
Movement LOS				C		C		A			A	
d_A, Approach Delay [s/veh]	0.00			34.02			8.22			8.78		
Approach LOS	A			C			A			A		
d_I, Intersection Delay [s/veh]	15.25											
Intersection LOS	B											
Intersection V/C	0.582											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	34.63	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	2.417	0.000	0.000
Crosswalk LOS	F	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1335	489	489
d_b, Bicycle Delay [s]	44.96	4.98	25.65	25.65
l_b,int, Bicycle LOS Score for Intersection	4.132	3.497	2.396	2.522
Bicycle LOS	D	C	B	B

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 16: SR-57 NB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	21.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.630

Intersection Setup

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	831	43	783	0	0	50	116	1281	531	0	1400	18
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	831	43	783	0	0	50	116	1281	531	0	1400	18
Peak Hour Factor	0.9080	0.9080	0.9080	1.0000	1.0000	0.6820	0.8790	0.8790	0.8790	1.0000	0.8940	0.8940
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	229	12	216	0	0	18	33	364	151	0	391	5
Total Analysis Volume [veh/h]	915	47	862	0	0	73	132	1457	604	0	1566	20
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Overlap	Protecte	Permiss	Unsigna	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	0	5	5	2	0	0	6	0
Auxiliary Signal Groups						5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	6	0	0	0	6	6	6	0	0	6	0
Maximum Green [s]	0	30	0	0	0	30	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	1.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	47	0	0	0	13	13	43	0	0	30	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	22	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No				No		No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No				No	No	No			No	
Maximum Recall		No				No	No	No			No	
Pedestrian Recall		No				No	No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	R	L	C	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	30	30	30	8	8	52	40	40
g / C, Green / Cycle	0.33	0.33	0.33	0.09	0.09	0.58	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.26	0.26	0.24	0.02	0.07	0.26	0.21	0.21
s, saturation flow rate [veh/h]	3500	1750	1900	3800	1800	5700	5700	1900
c, Capacity [veh/h]	1161	580	630	349	165	3304	2528	843
d1, Uniform Delay [s]	27.06	27.35	26.59	37.87	40.08	10.69	17.62	17.62
k, delay calibration	0.11	0.13	0.11	0.11	0.11	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.14	3.09	1.68	0.30	8.58	0.43	0.63	1.88
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77	0.80	0.73	0.21	0.80	0.44	0.47	0.47
d, Delay for Lane Group [s/veh]	28.20	30.44	28.28	38.17	48.66	11.12	18.26	19.51
Lane Group LOS	C	C	C	D	D	B	B	B
Critical Lane Group	No	Yes	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	8.55	9.20	8.76	0.75	3.22	5.11	5.67	5.96
50th-Percentile Queue Length [ft/ln]	213.65	230.01	218.92	18.81	80.48	127.67	141.75	149.08
95th-Percentile Queue Length [veh/ln]	13.34	14.17	13.61	1.35	5.79	8.81	9.58	9.97
95th-Percentile Queue Length [ft/ln]	333.51	354.37	340.25	33.87	144.86	220.32	239.38	249.20

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.21	30.44	29.29	0.00	0.00	38.17	48.66	11.12	0.00	0.00	18.56	19.51
Movement LOS	C	C	C			D	D	B			B	B
d_A, Approach Delay [s/veh]	28.79			38.17			14.24			18.57		
Approach LOS	C			D			B			B		
d_I, Intersection Delay [s/veh]	21.17											
Intersection LOS	C											
Intersection V/C	0.630											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.655	2.028	0.000	0.000
Crosswalk LOS	B	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	955	200	866	578
d_b, Bicycle Delay [s]	12.28	36.46	14.46	22.77
l_b,int, Bicycle LOS Score for Intersection	4.569	1.560	2.434	2.214
Bicycle LOS	E	A	B	B

Sequence

Ring 1	-	2	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 17: Associated Road at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	27.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.773

Intersection Setup

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	144	202	69	145	320	143	145	1794	97	89	1538	82
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	144	202	69	145	320	143	145	1794	97	89	1538	82
Peak Hour Factor	0.8870	0.8870	0.8870	0.9320	0.9320	0.9320	0.9120	0.9120	0.9120	0.9620	0.9620	0.9620
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	41	57	19	39	86	38	40	492	27	23	400	21
Total Analysis Volume [veh/h]	162	228	78	156	343	153	159	1967	106	93	1599	85
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	10	39	0	11	40	0	14	40	0	10	36	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	28	0	0	29	0	0	26	0	0	25	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	20	20	6	21	21	10	51	51	6	47	47
g / C, Green / Cycle	0.06	0.20	0.20	0.06	0.21	0.21	0.10	0.51	0.51	0.06	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.05	0.08	0.08	0.04	0.18	0.08	0.09	0.36	0.37	0.05	0.22	0.23
s, saturation flow rate [veh/h]	3500	1900	1900	3500	1900	1900	1800	3800	1900	1800	5700	1900
c, Capacity [veh/h]	213	387	387	224	393	393	181	1944	972	110	2690	897
d1, Uniform Delay [s]	46.31	34.64	34.44	45.90	38.44	34.26	44.42	18.66	18.98	46.57	17.86	18.19
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.52	0.69	0.62	3.85	6.13	0.63	12.55	2.16	4.71	16.14	0.57	1.93
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.76	0.41	0.38	0.70	0.87	0.39	0.88	0.70	0.73	0.85	0.46	0.49
d, Delay for Lane Group [s/veh]	51.82	35.33	35.06	49.75	44.57	34.89	56.97	20.82	23.69	62.71	18.43	20.12
Lane Group LOS	D	D	D	D	D	C	E	C	C	E	B	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.14	3.39	3.16	2.01	8.69	3.26	4.49	11.98	13.22	2.77	6.38	7.25
50th-Percentile Queue Length [ft/ln]	53.41	84.86	78.94	50.24	217.36	81.48	112.25	299.39	330.49	69.24	159.41	181.13
95th-Percentile Queue Length [veh/ln]	3.85	6.11	5.68	3.62	13.53	5.87	7.97	17.65	19.18	4.98	10.52	11.66
95th-Percentile Queue Length [ft/ln]	96.14	152.75	142.10	90.42	338.26	146.66	199.13	441.28	479.56	124.62	262.95	291.49

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	51.82	35.25	35.06	49.75	44.57	34.89	56.97	21.69	23.69	62.71	18.81	20.12
Movement LOS	D	D	D	D	D	C	E	C	C	E	B	C
d_A, Approach Delay [s/veh]	40.96			43.54			24.30			21.17		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	27.18											
Intersection LOS	C											
Intersection V/C	0.773											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	39.64	39.64	39.64	39.64
l_p,int, Pedestrian LOS Score for Intersection	2.502	2.640	3.236	3.215
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	700	719	719	640
d_b, Bicycle Delay [s]	21.16	20.51	20.51	23.15
l_b,int, Bicycle LOS Score for Intersection	1.946	2.635	2.787	2.293
Bicycle LOS	A	B	C	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 18: Castlegate Lane/Placentia Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	18.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.669

Intersection Setup

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	168	12	141	24	27	14	13	1756	347	170	1406	32
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	168	12	141	24	27	14	13	1756	347	170	1406	32
Peak Hour Factor	0.8320	0.8320	0.8320	0.6740	0.6740	0.6740	0.9510	0.9510	0.9510	0.8930	0.8930	0.8930
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	50	4	42	9	10	5	3	462	91	48	394	9
Total Analysis Volume [veh/h]	202	14	169	36	40	21	14	1846	365	190	1574	36
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	26	0	0	10	0	10	32	0	22	44	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	15	0	0	0	0	0	21	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	11	11	6	6	2	46	46	11	56	56
g / C, Green / Cycle	0.12	0.12	0.12	0.06	0.06	0.02	0.52	0.52	0.13	0.62	0.62
(v / s)_i Volume / Saturation Flow Rate	0.06	0.06	0.09	0.02	0.03	0.01	0.32	0.19	0.11	0.28	0.29
s, saturation flow rate [veh/h]	1750	1750	1900	1800	1900	1800	5700	1900	1800	3800	1900
c, Capacity [veh/h]	207	207	224	111	118	38	2934	978	230	2362	1181
d1, Uniform Delay [s]	37.38	37.39	38.50	40.49	41.00	43.55	15.70	13.14	38.34	8.95	9.09
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.03	2.06	5.08	1.66	3.51	5.86	1.03	1.09	7.30	0.62	1.32
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.52	0.52	0.75	0.32	0.52	0.37	0.63	0.37	0.83	0.45	0.47
d, Delay for Lane Group [s/veh]	39.41	39.45	43.58	42.15	44.50	49.41	16.74	14.23	45.63	9.57	10.41
Lane Group LOS	D	D	D	D	D	D	B	B	D	A	B
Critical Lane Group	No	No	Yes	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.32	2.33	3.88	0.81	1.41	0.37	8.68	4.47	4.49	5.02	5.51
50th-Percentile Queue Length [ft/ln]	57.98	58.36	96.92	20.21	35.33	9.18	216.95	111.63	112.33	125.39	137.79
95th-Percentile Queue Length [veh/ln]	4.17	4.20	6.98	1.45	2.54	0.66	13.51	7.93	7.97	8.69	9.36
95th-Percentile Queue Length [ft/ln]	104.36	105.05	174.46	36.37	63.59	16.52	337.73	198.27	199.23	217.21	234.04

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	39.43	39.45	43.58	42.15	44.50	44.50	49.41	16.74	14.23	45.63	9.85	10.41
Movement LOS	D	D	D	D	D	D	D	B	B	D	A	B
d_A, Approach Delay [s/veh]	41.25			43.63			16.53			13.64		
Approach LOS	D			D			B			B		
d_I, Intersection Delay [s/veh]	18.07											
Intersection LOS	B											
Intersection V/C	0.669											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.72	34.72	0.00	34.72
l_p,int, Pedestrian LOS Score for Intersection	2.370	1.992	0.000	3.130
Crosswalk LOS	B	A	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	488	133	622	888
d_b, Bicycle Delay [s]	25.73	39.24	21.40	13.92
l_b,int, Bicycle LOS Score for Intersection	2.195	1.720	2.783	2.550
Bicycle LOS	B	A	C	B

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Brea Mall Expansion, Brea

Vistro File: N:\...\4099 HCM Network.vistro
Report File: N:\...\PM Ex.pdf

Scenario 2 PM Existing
4/12/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State College Boulevard at Lambert Road	Signalized	HCM 6th Edition	WB Left	0.741	36.3	D
2	SR-57 SB Ramps at Lambert Road	Signalized	HCM 6th Edition	WB Left	0.663	19.5	B
3	SR-57 NB Ramps at Lambert Road	Signalized	HCM 6th Edition	EB Left	0.633	19.9	B
4	Randolph Avenue at Birch Street	Signalized	HCM 6th Edition	NB Left	0.501	30.1	C
5	State College Boulevard at Birch Street	Signalized	HCM 6th Edition	NB Left	0.716	30.6	C
6	S Associated Road at Birch Street	Signalized	HCM 6th Edition	EB Left	0.661	25.6	C
7	Randolph Avenue at Madison Way	Signalized	HCM 6th Edition	WB Left	0.185	19.0	B
8	Randolph Avenue at Brea Mall	Signalized	HCM 6th Edition	EB Left	0.333	18.3	B
9	Brea Mall South at State College Boulevard	Signalized	HCM 6th Edition	WB Left	0.600	30.7	C
10	Harbor Boulevard at Imperial Highway	Signalized	HCM 6th Edition	NB Left	0.812	41.7	D
11	Puente Street at Imperial Highway	Signalized	HCM 6th Edition	EB Left	0.625	18.5	B
12	Brea Boulevard at Imperial Highway	Signalized	HCM 6th Edition	WB Left	0.797	37.5	D
13	Randolph Avenue at Imperial Highway	Signalized	HCM 6th Edition	WB Left	0.694	23.4	C
14	State College Boulevard at Imperial Highway	Signalized	HCM 6th Edition	SB Left	0.960	56.0	E
15	SR-57 SB Ramps at Imperial Highway	Signalized	HCM 6th Edition	SB Left	0.691	15.9	B
16	SR-57 NB Ramps at Imperial Highway	Signalized	HCM 6th Edition	EB Left	0.731	22.5	C
17	Associated Road at Imperial Highway	Signalized	HCM 6th Edition	WB Left	0.850	40.7	D
18	Castlegate Lane/Placentia	Signalized	HCM 6th	EB Left	0.782	24.0	C

16	Avenue at Imperial Highway	Signalized	Edition	EB Left	0.782	24.0	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: State College Boulevard at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	36.3
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.741

Intersection Setup

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	302	576	253	545	372	15	38	1140	245	316	1008	686
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	302	576	253	545	372	15	38	1140	245	316	1008	686
Peak Hour Factor	0.9470	0.9470	0.9470	0.9220	0.9220	0.9220	0.8360	0.8360	0.8360	0.9740	0.9740	0.9740
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	80	152	67	148	101	4	11	341	73	81	259	176
Total Analysis Volume [veh/h]	319	608	267	591	403	16	45	1364	293	324	1035	704
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	20	36	0	28	44	0	10	39	0	17	46	46
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	0	0	0	33	0	0	28	0	0	22	22
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	13	23	23	23	24	34	34	5	44	44	13	53	81
g / C, Green / Cycle	0.11	0.19	0.19	0.19	0.20	0.28	0.28	0.04	0.37	0.37	0.11	0.44	0.67
(v / s)_i Volume / Saturation Flow Rate	0.09	0.16	0.16	0.14	0.17	0.11	0.11	0.01	0.22	0.21	0.09	0.18	0.37
s, saturation flow rate [veh/h]	3500	1900	1900	1900	3500	1900	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	382	358	358	358	700	531	531	139	2108	703	379	2498	1276
d1, Uniform Delay [s]	52.42	47.13	47.10	45.86	46.21	35.05	34.99	56.08	30.53	30.36	52.61	23.14	10.28
k, delay calibration	0.11	0.16	0.16	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.84	8.58	8.42	2.91	2.88	0.48	0.47	1.33	1.23	3.48	5.58	0.51	1.72
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.84	0.86	0.85	0.73	0.84	0.40	0.39	0.32	0.59	0.58	0.86	0.41	0.55
d, Delay for Lane Group [s/veh]	57.27	55.71	55.52	48.77	49.10	35.53	35.46	57.41	31.77	33.83	58.19	23.65	12.00
Lane Group LOS	E	E	E	D	D	D	D	E	C	C	E	C	B
Critical Lane Group	No	Yes	No	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.97	9.69	9.65	7.66	8.74	5.09	5.01	0.69	9.90	10.08	5.09	6.79	9.60
50th-Percentile Queue Length [ft/ln]	124.1	242.2	241.2	191.4	218.45	127.13	125.21	17.25	247.55	252.07	127.21	169.70	240.12
95th-Percentile Queue Length [veh/ln]	8.62	14.80	14.74	12.19	13.59	8.78	8.68	1.24	15.06	15.29	8.79	11.06	14.69
95th-Percentile Queue Length [ft/ln]	215.4	369.9	368.5	304.8	339.64	219.58	216.96	31.06	376.56	382.26	219.70	276.52	367.19

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	57.27	55.62	48.77	49.10	35.50	35.46	57.41	31.94	33.83	58.19	23.65	12.00
Movement LOS	E	E	D	D	D	D	E	C	C	E	C	B
d_A, Approach Delay [s/veh]	54.55			43.46			32.94			25.10		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	36.33											
Intersection LOS	D											
Intersection V/C	0.741											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.52	49.52	49.52	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.916	2.851	3.196	0.000
Crosswalk LOS	C	C	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	533	666	583	700
d_b, Bicycle Delay [s]	32.28	26.68	30.12	25.36
l_b,int, Bicycle LOS Score for Intersection	2.545	2.393	2.262	2.694
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: SR-57 SB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	19.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.663

Intersection Setup

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	0	0	0	443	0	697	0	1115	746	226	1610	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	443	0	697	0	1115	746	226	1610	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9480	1.0000	0.9480	1.0000	0.8820	0.8820	0.9530	0.9530	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	117	0	184	0	316	211	59	422	0
Total Analysis Volume [veh/h]	0	0	0	467	0	735	0	1264	846	237	1689	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	7	0	0	0	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	6	0	0	0	6	0	6	6	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	45	0	0	0	33	0	12	45	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	12	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall				No				No		No	No	
Maximum Recall				No				No		No	No	
Pedestrian Recall				No				No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	C	R	L	C
C, Cycle Length [s]		90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		25	25	25	45	45	45	8	57
g / C, Green / Cycle		0.28	0.28	0.28	0.50	0.50	0.50	0.09	0.64
(v / s)_i Volume / Saturation Flow Rate		0.23	0.23	0.21	0.28	0.28	0.28	0.07	0.30
s, saturation flow rate [veh/h]		1750	1750	1900	3800	1900	1900	3500	5700
c, Capacity [veh/h]		483	483	524	1907	953	953	311	3620
d1, Uniform Delay [s]		30.61	30.61	29.91	15.47	15.47	15.47	40.08	8.52
k, delay calibration		0.11	0.11	0.11	0.50	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		3.73	3.73	2.35	1.16	2.31	2.31	3.84	0.43
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.83	0.83	0.76	0.55	0.55	0.55	0.76	0.47
d, Delay for Lane Group [s/veh]		34.34	34.34	32.25	16.64	17.79	17.79	43.92	8.95
Lane Group LOS		C	C	C	B	B	B	D	A
Critical Lane Group		Yes	No	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]		8.41	8.41	8.07	7.29	7.60	7.60	2.70	5.14
50th-Percentile Queue Length [ft/ln]		210.30	210.30	201.80	182.28	189.90	189.90	67.41	128.38
95th-Percentile Queue Length [veh/ln]		13.17	13.17	12.73	11.72	12.12	12.12	4.85	8.85
95th-Percentile Queue Length [ft/ln]		329.22	329.22	318.28	293.00	302.89	302.89	121.33	221.29

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	34.34	0.00	33.20	0.00	16.64	17.79	43.92	8.95	0.00
Movement LOS				C		C		B	B	D	A	
d_A, Approach Delay [s/veh]	0.00			33.65			17.21			13.25		
Approach LOS	A			C			B			B		
d_I, Intersection Delay [s/veh]	19.53											
Intersection LOS	B											
Intersection V/C	0.663											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.242	2.330	0.000	0.000
Crosswalk LOS	B	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	911	644	911
d_b, Bicycle Delay [s]	45.01	13.35	20.68	13.35
l_b,int, Bicycle LOS Score for Intersection	4.132	3.543	2.720	2.619
Bicycle LOS	D	D	B	B

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 3: SR-57 NB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	19.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.633

Intersection Setup

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	636	0	260	0	0	0	356	1407	0	0	1024	511
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	636	0	260	0	0	0	356	1407	0	0	1024	511
Peak Hour Factor	0.8400	1.0000	0.8400	1.0000	1.0000	1.0000	0.8440	0.8440	1.0000	1.0000	0.9530	0.9530
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	189	0	77	0	0	0	105	417	0	0	269	134
Total Analysis Volume [veh/h]	757	0	310	0	0	0	422	1667	0	0	1075	536
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	0	0	0	0	0	5	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	6	0	0	0	0	0	6	6	0	0	6	0
Maximum Green [s]	30	0	0	0	0	0	30	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	47	0	0	0	0	0	22	43	0	0	21	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	14	0	0	0	0	0	0	16	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No						No	No			No	
Maximum Recall	No						No	No			No	
Pedestrian Recall	No						No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R		L	C	C	C	R
C, Cycle Length [s]	90	90		90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	24	24		13	58	41	41	41
g / C, Green / Cycle	0.26	0.26		0.15	0.65	0.46	0.46	0.46
(v / s)_i Volume / Saturation Flow Rate	0.22	0.16		0.12	0.29	0.21	0.21	0.21
s, saturation flow rate [veh/h]	3500	1900		3500	5700	3800	1900	1900
c, Capacity [veh/h]	922	501		515	3691	1733	867	867
d1, Uniform Delay [s]	31.16	29.18		37.24	7.90	16.90	16.90	16.90
k, delay calibration	0.11	0.11		0.11	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.89	1.25		3.30	0.40	0.90	1.79	1.79
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.82	0.62		0.82	0.45	0.46	0.46	0.46
d, Delay for Lane Group [s/veh]	33.04	30.43		40.54	8.30	17.80	18.69	18.69
Lane Group LOS	C	C		D	A	B	B	B
Critical Lane Group	Yes	No		Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	7.74	5.93		4.66	4.79	5.69	5.90	5.90
50th-Percentile Queue Length [ft/ln]	193.62	148.24		116.57	119.74	142.21	147.58	147.58
95th-Percentile Queue Length [veh/ln]	12.31	9.92		8.20	8.38	9.60	9.89	9.89
95th-Percentile Queue Length [ft/ln]	307.72	248.08		205.11	209.47	240.00	247.19	247.19

Movement, Approach, & Intersection Results

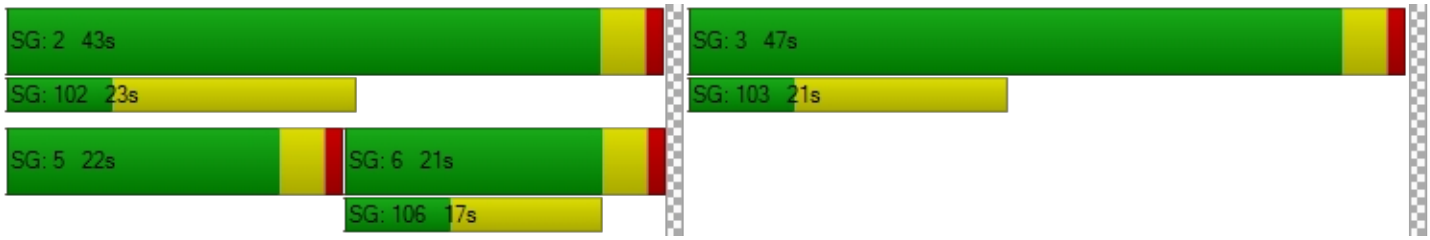
d_M, Delay for Movement [s/veh]	33.04	0.00	30.43	0.00	0.00	0.00	40.54	8.30	0.00	0.00	17.80	18.69
Movement LOS	C		C				D	A			B	B
d_A, Approach Delay [s/veh]	32.29			0.00			14.82			18.25		
Approach LOS	C			A			B			B		
d_I, Intersection Delay [s/veh]	19.89											
Intersection LOS	B											
Intersection V/C	0.633											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	0.00	34.68
l_p,int, Pedestrian LOS Score for Intersection	2.286	2.181	0.000	3.093
Crosswalk LOS	B	B	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	955	0	866	378
d_b, Bicycle Delay [s]	12.28	45.01	14.46	29.62
l_b,int, Bicycle LOS Score for Intersection	1.560	4.132	2.709	2.446
Bicycle LOS	A	D	B	B

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Randolph Avenue at Birch Street

Control Type:	Signalized	Delay (sec / veh):	30.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.501

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Base Volume Input [veh/h]	129	56	162	50	48	106	77	608	93	183	1034	38
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	129	56	162	50	48	106	77	608	93	183	1034	38
Peak Hour Factor	0.8740	0.8740	0.8740	0.7860	0.7860	0.7860	0.9250	0.9250	0.9250	0.9540	0.9540	0.9540
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	16	46	16	15	34	21	164	25	48	271	10
Total Analysis Volume [veh/h]	148	64	185	64	61	135	83	657	101	192	1084	40
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	41	0	0	41	0	11	31	0	18	38	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	25	0	0	19	0	0	18	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	12	12	12	12	5	55	55	11	61	61
g / C, Green / Cycle	0.13	0.13	0.13	0.13	0.13	0.06	0.61	0.61	0.13	0.68	0.68
(v / s)_i Volume / Saturation Flow Rate	0.08	0.03	0.10	0.04	0.10	0.05	0.20	0.19	0.11	0.29	0.02
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1800	1900	1900	1800	3800	1900
c, Capacity [veh/h]	104	246	246	227	246	110	1158	1158	230	2569	1284
d1, Uniform Delay [s]	36.21	35.32	37.81	35.38	38.05	41.62	8.64	8.54	38.36	6.62	4.83
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	203.63	0.55	4.58	0.67	5.79	9.86	0.78	0.73	7.72	0.51	0.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.43	0.26	0.75	0.28	0.80	0.75	0.33	0.32	0.83	0.42	0.03
d, Delay for Lane Group [s/veh]	239.85	35.87	42.39	36.05	43.84	51.48	9.42	9.27	46.07	7.13	4.88
Lane Group LOS	F	D	D	D	D	D	A	A	D	A	A
Critical Lane Group	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	7.95	1.29	4.19	1.30	4.53	2.10	3.59	3.39	4.57	4.11	0.23
50th-Percentile Queue Length [ft/ln]	198.77	32.24	104.68	32.41	113.17	52.41	89.83	84.73	114.13	102.86	5.70
95th-Percentile Queue Length [veh/ln]	14.14	2.32	7.54	2.33	8.02	3.77	6.47	6.10	8.07	7.41	0.41
95th-Percentile Queue Length [ft/ln]	353.58	58.03	188.42	58.34	200.40	94.34	161.69	152.51	201.74	185.14	10.26

Movement, Approach, & Intersection Results

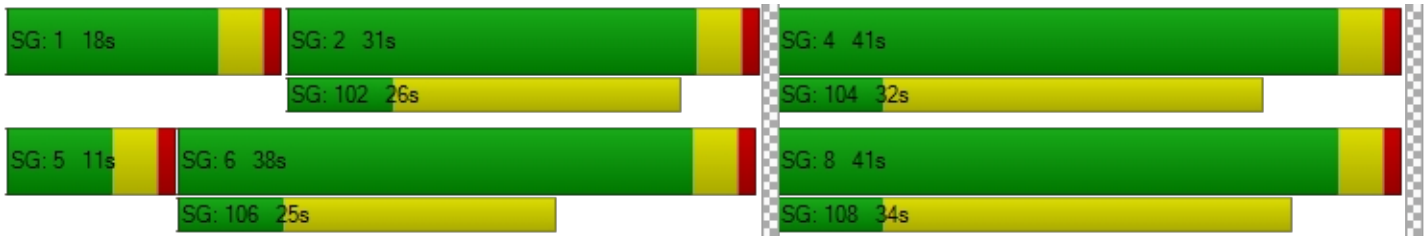
d_M, Delay for Movement [s/veh]	239.85	35.87	42.39	36.05	43.84	43.84	51.48	9.36	9.27	46.07	7.13	4.88
Movement LOS	F	D	D	D	D	D	D	A	A	D	A	A
d_A, Approach Delay [s/veh]	114.95			41.93			13.50			12.74		
Approach LOS	F			D			B			B		
d_I, Intersection Delay [s/veh]	30.09											
Intersection LOS	C											
Intersection V/C	0.501											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.70	34.70	34.70	34.70
l_p,int, Pedestrian LOS Score for Intersection	2.314	2.085	2.940	2.905
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	822	822	600	755
d_b, Bicycle Delay [s]	15.63	15.63	22.07	17.44
l_b,int, Bicycle LOS Score for Intersection	2.215	1.989	2.253	2.645
Bicycle LOS	B	A	B	B

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: State College Boulevard at Birch Street

Control Type:	Signalized	Delay (sec / veh):	30.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.716

Intersection Setup

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Base Volume Input [veh/h]	139	353	156	310	324	257	194	741	154	141	949	602
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	139	353	156	310	324	257	194	741	154	141	949	602
Peak Hour Factor	0.9210	0.9210	0.9210	0.9620	0.9620	0.9620	0.9110	0.9110	0.9110	0.9550	0.9550	0.9550
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	38	96	42	81	84	67	53	203	42	37	248	158
Total Analysis Volume [veh/h]	151	383	169	322	337	267	213	813	169	148	994	630
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	10	39	0	17	46	0	12	39	0	10	37	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	28	0	0	30	0	0	28	0	0	26	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	105	105	105	105	105	105	105	105	105	105	105	105
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	15	15	12	21	21	8	56	56	6	54	54
g / C, Green / Cycle	0.06	0.15	0.15	0.11	0.20	0.20	0.08	0.53	0.53	0.06	0.51	0.51
(v / s)_i Volume / Saturation Flow Rate	0.04	0.10	0.09	0.09	0.17	0.15	0.06	0.21	0.09	0.04	0.26	0.33
s, saturation flow rate [veh/h]	3500	3800	1900	3500	1900	1900	3500	3800	1900	3500	3800	1900
c, Capacity [veh/h]	203	555	278	390	379	379	269	2022	1011	203	1950	975
d1, Uniform Delay [s]	48.75	42.61	42.06	45.70	40.62	39.45	47.69	14.63	12.63	48.70	16.87	18.63
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.33	1.54	2.15	4.45	5.68	2.76	5.19	0.60	0.36	4.97	0.96	3.30
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.74	0.69	0.61	0.83	0.86	0.73	0.79	0.40	0.17	0.73	0.51	0.65
d, Delay for Lane Group [s/veh]	54.08	44.15	44.21	50.15	46.31	42.21	52.87	15.23	12.98	53.67	17.82	21.93
Lane Group LOS	D	D	D	D	D	D	D	B	B	D	B	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.09	4.81	4.26	4.33	8.64	6.97	2.92	5.72	2.09	2.04	7.86	11.54
50th-Percentile Queue Length [ft/ln]	52.32	120.33	106.38	108.24	216.10	174.37	73.07	143.02	52.30	51.06	196.48	288.44
95th-Percentile Queue Length [veh/ln]	3.77	8.41	7.64	7.74	13.47	11.31	5.26	9.64	3.77	3.68	12.46	17.11
95th-Percentile Queue Length [ft/ln]	94.18	210.28	190.95	193.55	336.64	282.66	131.53	241.08	94.15	91.90	311.42	427.70

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	54.08	44.15	44.21	50.15	46.17	42.21	52.87	15.23	12.98	53.67	17.82	21.93
Movement LOS	D	D	D	D	D	D	D	B	B	D	B	C
d_A, Approach Delay [s/veh]	46.30			46.41			21.62			22.28		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	30.64											
Intersection LOS	C											
Intersection V/C	0.716											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	42.11	42.11	42.11	42.11
l_p,int, Pedestrian LOS Score for Intersection	2.790	2.810	2.964	3.030
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	666	800	666	628
d_b, Bicycle Delay [s]	23.36	18.93	23.36	24.71
l_b,int, Bicycle LOS Score for Intersection	2.140	2.324	2.545	3.022
Bicycle LOS	B	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 6: S Associated Road at Birch Street

Control Type:	Signalized	Delay (sec / veh):	25.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.661

Intersection Setup

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Base Volume Input [veh/h]	460	32	342	11	19	6	13	855	287	284	1213	17
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	460	32	342	11	19	6	13	855	287	284	1213	17
Peak Hour Factor	0.9370	0.9370	0.9370	0.8500	0.8500	0.8500	0.9910	0.9910	0.9910	0.9420	0.9420	0.9420
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	123	9	91	3	6	2	3	216	72	75	322	5
Total Analysis Volume [veh/h]	491	34	365	13	22	7	13	863	290	301	1288	18
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	8	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups			1,8									
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	6	0	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	30	0	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	23	60	60	0	37	0	10	38	0	17	45	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	26	26	0	26	0	0	27	0	0	26	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No		No		No	No		No	No	
Maximum Recall	No	No	No		No		No	No		No	No	
Pedestrian Recall	No	No	No		No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	C
C, Cycle Length [s]	115	115	115	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	27	44	4	4	2	63	63	13	74	74
g / C, Green / Cycle	0.16	0.23	0.38	0.04	0.04	0.02	0.55	0.55	0.11	0.65	0.65
(v / s)_i Volume / Saturation Flow Rate	0.14	0.02	0.19	0.01	0.02	0.01	0.32	0.29	0.09	0.34	0.34
s, saturation flow rate [veh/h]	3500	1900	1900	1800	1900	1800	1900	1900	3500	1900	1900
c, Capacity [veh/h]	550	439	720	80	74	33	1048	1048	396	1228	1228
d1, Uniform Delay [s]	47.53	34.64	27.46	53.51	53.94	55.84	16.93	16.31	49.48	10.96	10.94
k, delay calibration	0.11	0.11	0.26	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.29	0.07	1.32	0.95	3.33	7.55	2.28	1.90	3.01	1.66	1.65
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.89	0.08	0.51	0.16	0.39	0.40	0.57	0.53	0.76	0.53	0.53
d, Delay for Lane Group [s/veh]	52.82	34.71	28.77	54.46	57.28	63.40	19.21	18.21	52.49	12.62	12.59
Lane Group LOS	D	C	C	D	E	E	B	B	D	B	B
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	7.27	0.76	7.93	0.39	0.89	0.44	10.72	9.44	4.36	8.93	8.89
50th-Percentile Queue Length [ft/ln]	181.78	19.01	198.26	9.64	22.20	11.05	267.92	236.12	108.91	223.30	222.33
95th-Percentile Queue Length [veh/ln]	11.69	1.37	12.55	0.69	1.60	0.80	16.09	14.49	7.78	13.83	13.78
95th-Percentile Queue Length [ft/ln]	292.34	34.21	313.72	17.34	39.96	19.89	402.15	362.13	194.48	345.84	344.60

Movement, Approach, & Intersection Results

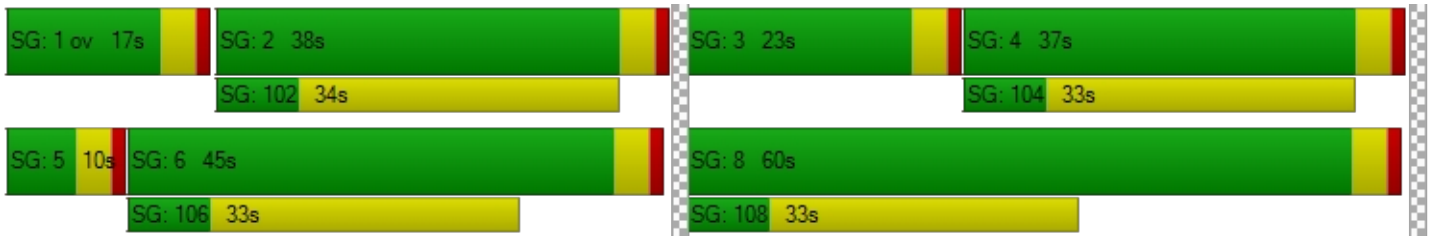
d_M, Delay for Movement [s/veh]	52.82	34.71	28.77	54.46	57.28	57.28	63.40	18.91	18.21	52.49	12.60	12.59
Movement LOS	D	C	C	D	E	E	E	B	B	D	B	B
d_A, Approach Delay [s/veh]	42.26			56.40			19.23			20.07		
Approach LOS	D			E			B			C		
d_I, Intersection Delay [s/veh]	25.55											
Intersection LOS	C											
Intersection V/C	0.661											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	47.04	47.04	47.04	47.04
l_p,int, Pedestrian LOS Score for Intersection	2.709	1.987	2.887	2.946
Crosswalk LOS	B	A	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	974	574	591	713
d_b, Bicycle Delay [s]	15.14	29.24	28.54	23.82
l_b,int, Bicycle LOS Score for Intersection	3.028	1.629	2.522	2.885
Bicycle LOS	C	A	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 7: Randolph Avenue at Madison Way

Control Type:	Signalized	Delay (sec / veh):	19.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.185

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Base Volume Input [veh/h]	46	308	41	27	245	27	60	4	50	72	4	37
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	46	308	41	27	245	27	60	4	50	72	4	37
Peak Hour Factor	0.9560	0.9560	0.9560	0.9590	0.9590	0.9590	0.6990	0.6990	0.6990	0.8710	0.8710	0.8710
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	81	11	7	64	7	21	1	18	21	1	11
Total Analysis Volume [veh/h]	48	322	43	28	255	28	86	6	72	83	5	42
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	6	6	0	6	6	0	0	6	0	0	6	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	12	26	0	10	24	0	0	54	0	0	54	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	15	0	0	12	0	0	19	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	69	69	3	67	67	6	6	6	6
g / C, Green / Cycle	0.05	0.76	0.76	0.03	0.75	0.75	0.07	0.07	0.07	0.07
(v / s)_i Volume / Saturation Flow Rate	0.03	0.10	0.09	0.02	0.08	0.07	0.05	0.04	0.05	0.02
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1900	1800	1900	1800	1900
c, Capacity [veh/h]	86	1444	1444	63	1419	1419	134	137	105	137
d1, Uniform Delay [s]	41.94	2.87	2.87	42.61	3.12	3.11	40.72	40.43	40.65	39.76
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.56	0.18	0.18	4.92	0.14	0.14	5.08	3.70	12.31	1.48
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.56	0.13	0.12	0.45	0.10	0.10	0.64	0.57	0.79	0.34
d, Delay for Lane Group [s/veh]	47.50	3.06	3.04	47.53	3.26	3.25	45.80	44.14	52.96	41.24
Lane Group LOS	D	A	A	D	A	A	D	D	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	1.17	0.71	0.69	0.69	0.58	0.57	2.03	1.79	2.13	1.04
50th-Percentile Queue Length [ft/ln]	29.14	17.69	17.15	17.26	14.60	14.30	50.63	44.86	53.21	25.90
95th-Percentile Queue Length [veh/ln]	2.10	1.27	1.23	1.24	1.05	1.03	3.65	3.23	3.83	1.87
95th-Percentile Queue Length [ft/ln]	52.45	31.84	30.87	31.07	26.27	25.75	91.13	80.76	95.79	46.63

Movement, Approach, & Intersection Results

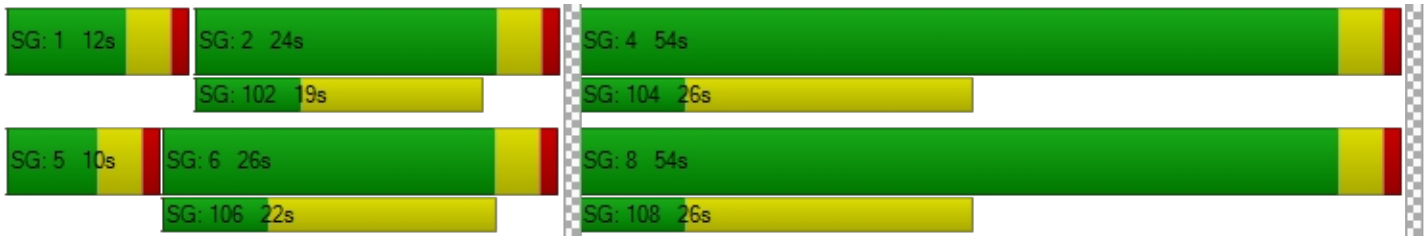
d_M, Delay for Movement [s/veh]	47.50	3.05	3.04	47.53	3.26	3.25	45.80	44.14	44.14	52.96	41.24	41.24
Movement LOS	D	A	A	D	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	8.22			7.24			45.01			48.72		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	19.02											
Intersection LOS	B											
Intersection V/C	0.185											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	34.68	34.68
l_p,int, Pedestrian LOS Score for Intersection	2.578	2.570	2.019	2.007
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	489	444	1111	1111
d_b, Bicycle Delay [s]	25.70	27.23	8.90	8.90
l_b,int, Bicycle LOS Score for Intersection	1.900	1.816	1.830	1.774
Bicycle LOS	A	A	A	A

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 8: Randolph Avenue at Brea Mall

Control Type:	Signalized	Delay (sec / veh):	18.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.333

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Base Volume Input [veh/h]	16	314	310	36	345	19	17	3	12	263	3	45
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	314	310	36	345	19	17	3	12	263	3	45
Peak Hour Factor	0.9560	0.9560	0.9560	0.9310	0.9310	0.9310	0.9380	0.9380	0.9380	0.8620	0.8620	0.8620
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	82	81	10	93	5	5	1	3	76	1	13
Total Analysis Volume [veh/h]	17	328	324	39	371	20	18	3	13	305	3	52
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	6	6	0	6	6	0	0	6	0	0	6	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	29	0	10	29	0	0	30	0	0	31	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	17	0	0	18	0	0	19	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	R	L	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	72	64	64	72	65	65	4	4	13	13
g / C, Green / Cycle	0.72	0.64	0.64	0.72	0.65	0.65	0.04	0.04	0.13	0.13
(v / s)_i Volume / Saturation Flow Rate	0.01	0.17	0.17	0.02	0.10	0.10	0.01	0.01	0.10	0.09
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1900	1800	1900	1800	1900
c, Capacity [veh/h]	1315	1208	1208	1249	1240	1240	67	71	228	241
d1, Uniform Delay [s]	4.07	8.02	8.00	4.13	6.73	6.72	46.92	46.69	42.46	42.07
k, delay calibration	0.11	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.00	0.55	0.55	0.05	0.27	0.27	2.62	1.23	6.40	4.32
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.01	0.27	0.27	0.03	0.16	0.16	0.31	0.18	0.80	0.74
d, Delay for Lane Group [s/veh]	4.08	8.58	8.55	4.17	7.00	6.99	49.54	47.92	48.86	46.39
Lane Group LOS	A	A	A	A	A	A	D	D	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.09	3.05	3.00	0.22	1.57	1.55	0.56	0.34	4.76	4.47
50th-Percentile Queue Length [ft/ln]	2.18	76.18	75.05	5.38	39.34	38.80	13.90	8.42	118.97	111.67
95th-Percentile Queue Length [veh/ln]	0.16	5.49	5.40	0.39	2.83	2.79	1.00	0.61	8.34	7.93
95th-Percentile Queue Length [ft/ln]	3.92	137.13	135.09	9.68	70.81	69.83	25.03	15.15	208.41	198.33

Movement, Approach, & Intersection Results

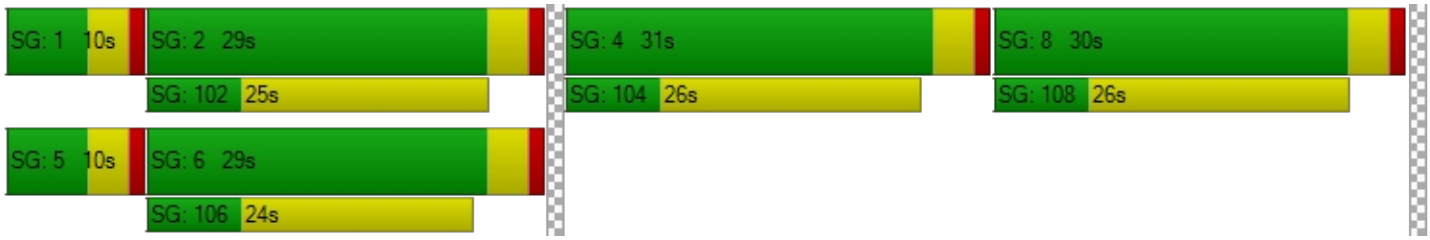
d_M, Delay for Movement [s/veh]	4.08	8.58	8.55	4.17	6.99	6.99	49.54	49.54	47.92	47.87	46.39	46.39
Movement LOS	A	A	A	A	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	8.45			6.74			48.92			47.65		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	18.33											
Intersection LOS	B											
Intersection V/C	0.333											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	39.62	39.62	39.62	39.62
l_p,int, Pedestrian LOS Score for Intersection	2.570	2.466	1.985	2.217
Crosswalk LOS	B	B	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	500	500	520	540
d_b, Bicycle Delay [s]	28.14	28.14	27.40	26.66
l_b,int, Bicycle LOS Score for Intersection	2.112	1.914	1.616	2.154
Bicycle LOS	B	A	A	B

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 9: Brea Mall South at State College Boulevard

Control Type:	Signalized	Delay (sec / veh):	30.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.600

Intersection Setup

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Base Volume Input [veh/h]	138	19	64	43	13	368	475	494	22	95	414	26
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	138	19	64	43	13	368	475	494	22	95	414	26
Peak Hour Factor	0.8330	0.8330	0.8330	0.9000	0.9000	0.9000	0.8700	0.8700	0.8700	0.9090	0.9090	0.9090
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	41	6	19	12	4	102	136	142	6	26	114	7
Total Analysis Volume [veh/h]	166	23	77	48	14	409	546	568	25	105	455	29
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	4	5	2	0	1	6	0
Auxiliary Signal Groups						4,5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	6	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	30	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	37	0	0	10	10	41	31	0	42	32	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	26	0	0	0	0	0	20	0	0	21	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No	No	No	No		No	No	
Maximum Recall		No			No	No	No	No		No	No	
Pedestrian Recall		No			No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	C	C	R	L	C	C	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	10	10	10	6	6	49	24	79	79	9	63	63
g / C, Green / Cycle	0.09	0.09	0.09	0.05	0.05	0.41	0.20	0.66	0.66	0.07	0.53	0.53
(v / s)_i Volume / Saturation Flow Rate	0.04	0.07	0.04	0.03	0.01	0.22	0.16	0.16	0.15	0.06	0.13	0.13
s, saturation flow rate [veh/h]	1800	1800	1900	1800	1900	1900	3500	1900	1900	1800	1900	1900
c, Capacity [veh/h]	190	209	163	93	98	770	705	1244	1244	134	1003	1003
d1, Uniform Delay [s]	52.17	53.80	52.31	55.51	54.44	27.07	45.40	8.50	8.47	54.61	15.35	15.31
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.35	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.15	2.52	2.11	4.41	0.66	1.84	1.87	0.46	0.45	9.41	0.58	0.56
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.36	0.58	0.47	0.52	0.14	0.53	0.78	0.24	0.24	0.78	0.24	0.24
d, Delay for Lane Group [s/veh]	53.32	56.32	54.42	59.93	55.10	28.91	47.27	8.95	8.92	64.03	15.92	15.87
Lane Group LOS	D	E	D	E	E	C	D	A	A	E	B	B
Critical Lane Group	No	Yes	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.02	3.72	2.31	1.53	0.42	9.22	7.86	3.20	3.15	3.47	3.76	3.69
50th-Percentile Queue Length [ft/ln]	50.45	92.96	57.76	38.32	10.60	230.59	196.45	80.08	78.72	86.83	94.09	92.17
95th-Percentile Queue Length [veh/ln]	3.63	6.69	4.16	2.76	0.76	14.20	12.46	5.77	5.67	6.25	6.77	6.64
95th-Percentile Queue Length [ft/ln]	90.81	167.32	103.96	68.97	19.07	355.11	311.39	144.15	141.69	156.29	169.36	165.91

Movement, Approach, & Intersection Results

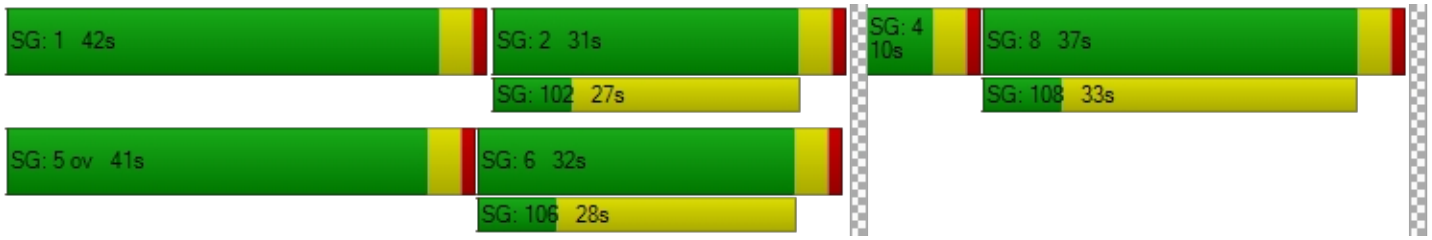
d_M, Delay for Movement [s/veh]	55.04	56.32	54.42	59.93	55.10	28.91	47.27	8.94	8.92	64.03	15.90	15.87
Movement LOS	E	E	D	E	E	C	D	A	A	E	B	B
d_A, Approach Delay [s/veh]	55.00			32.85			27.31			24.48		
Approach LOS	D			C			C			C		
d_I, Intersection Delay [s/veh]	30.68											
Intersection LOS	C											
Intersection V/C	0.600											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.54	49.54	0.00	49.54
l_p,int, Pedestrian LOS Score for Intersection	2.394	2.522	0.000	2.564
Crosswalk LOS	B	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	550	100	450	466
d_b, Bicycle Delay [s]	31.57	54.18	36.07	35.30
l_b,int, Bicycle LOS Score for Intersection	1.999	1.948	2.499	2.046
Bicycle LOS	A	A	B	B

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 10: Harbor Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	41.7
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.812

Intersection Setup

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	426	1091	211	196	852	306	268	1189	287	425	1498	219
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	426	1091	211	196	852	306	268	1189	287	425	1498	219
Peak Hour Factor	0.9550	0.9550	0.9550	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9450	0.9450	0.9450
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	112	286	55	52	225	81	71	314	76	112	396	58
Total Analysis Volume [veh/h]	446	1142	221	207	901	323	283	1257	303	450	1585	232
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	19	46	0	12	39	0	15	42	0	20	47	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	31	0	0	28	0	0	31	0	0	29	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	32	32	8	25	25	11	48	48	16	53	53
g / C, Green / Cycle	0.13	0.27	0.27	0.07	0.21	0.21	0.09	0.40	0.40	0.13	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.13	0.20	0.12	0.06	0.16	0.17	0.08	0.28	0.27	0.13	0.28	0.12
s, saturation flow rate [veh/h]	3500	5700	1900	3500	5700	1900	3500	3800	1900	3500	5700	1900
c, Capacity [veh/h]	440	1516	505	238	1186	395	325	1515	758	469	2508	836
d1, Uniform Delay [s]	52.50	40.47	36.62	55.45	44.73	45.37	53.78	30.07	29.57	51.68	26.09	21.45
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.15	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	23.09	0.78	0.60	9.38	1.03	5.75	7.21	2.68	4.60	11.78	1.22	0.82
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.01	0.75	0.44	0.87	0.76	0.82	0.87	0.70	0.67	0.96	0.63	0.28
d, Delay for Lane Group [s/veh]	75.59	41.25	37.22	64.82	45.76	51.12	60.99	32.74	34.17	63.46	27.31	22.28
Lane Group LOS	F	D	D	E	D	D	E	C	C	E	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	8.03	10.39	5.48	3.41	8.50	9.79	4.54	13.09	12.75	7.48	11.82	4.36
50th-Percentile Queue Length [ft/ln]	200.85	259.66	137.07	85.36	212.62	244.66	113.54	327.23	318.63	187.07	295.45	108.91
95th-Percentile Queue Length [veh/ln]	12.75	15.67	9.32	6.15	13.29	14.92	8.04	19.02	18.60	11.97	17.46	7.78
95th-Percentile Queue Length [ft/ln]	318.76	391.79	233.08	153.65	332.18	372.92	200.92	475.57	465.00	299.22	436.40	194.49

Movement, Approach, & Intersection Results

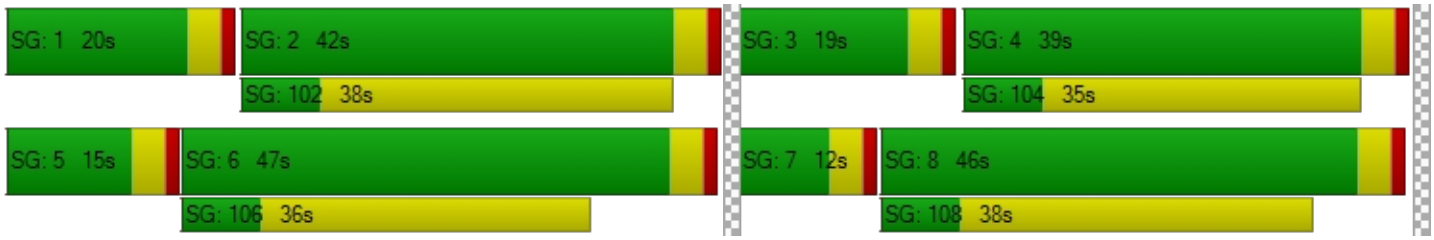
d_M, Delay for Movement [s/veh]	75.59	41.25	37.22	64.82	45.76	51.12	60.99	32.97	34.17	63.46	27.31	22.28
Movement LOS	F	D	D	E	D	D	E	C	C	E	C	C
d_A, Approach Delay [s/veh]	49.22			49.73			37.47			33.97		
Approach LOS	D			D			D			C		
d_I, Intersection Delay [s/veh]	41.67											
Intersection LOS	D											
Intersection V/C	0.812											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.54	49.54	49.54	49.54
l_p,int, Pedestrian LOS Score for Intersection	3.238	3.198	3.251	3.291
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	700	583	633	716
d_b, Bicycle Delay [s]	25.38	30.13	28.04	24.73
l_b,int, Bicycle LOS Score for Intersection	2.555	2.347	2.573	2.806
Bicycle LOS	B	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 11: Puente Street at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	18.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.625

Intersection Setup

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	35	47	81	163	104	204	125	1421	37	103	1643	253
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	35	47	81	163	104	204	125	1421	37	103	1643	253
Peak Hour Factor	0.7970	0.7970	0.7970	0.6700	0.6700	0.6700	0.9700	0.9700	0.9700	0.9160	0.9160	0.9160
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	15	25	61	39	76	32	366	10	28	448	69
Total Analysis Volume [veh/h]	44	59	102	243	155	304	129	1465	38	112	1794	276
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	47	0	0	47	0	12	34	0	14	36	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	23	0	0	17	0	0	23	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	95	95	95	95	95	95	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	18	18	18	18	18	8	57	57	8	57	57
g / C, Green / Cycle	0.19	0.19	0.19	0.19	0.19	0.19	0.09	0.60	0.60	0.08	0.60	0.60
(v / s)_i Volume / Saturation Flow Rate	0.02	0.03	0.05	0.14	0.04	0.16	0.07	0.26	0.27	0.06	0.31	0.15
s, saturation flow rate [veh/h]	1800	1900	1900	1800	3800	1900	1800	3800	1900	1800	5700	1900
c, Capacity [veh/h]	326	364	364	341	728	364	155	2289	1145	144	3398	1133
d1, Uniform Delay [s]	31.84	32.05	32.82	35.91	32.38	36.98	42.77	10.16	10.29	42.92	11.31	9.07
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.19	0.21	0.42	2.78	0.14	5.06	10.99	0.60	1.27	8.83	0.59	0.51
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.14	0.16	0.28	0.71	0.21	0.84	0.83	0.43	0.45	0.78	0.53	0.24
d, Delay for Lane Group [s/veh]	32.02	32.26	33.24	38.69	32.52	42.04	53.77	10.76	11.57	51.75	11.90	9.58
Lane Group LOS	C	C	C	D	C	D	D	B	B	D	B	A
Critical Lane Group	No	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.85	1.14	2.03	5.45	1.51	7.19	3.43	5.27	5.74	2.91	6.95	2.66
50th-Percentile Queue Length [ft/ln]	21.24	28.62	50.80	136.24	37.65	179.83	85.69	131.67	143.47	72.78	173.65	66.56
95th-Percentile Queue Length [veh/ln]	1.53	2.06	3.66	9.28	2.71	11.59	6.17	9.03	9.67	5.24	11.27	4.79
95th-Percentile Queue Length [ft/ln]	38.23	51.52	91.43	231.95	67.78	289.79	154.24	225.76	241.69	131.00	281.70	119.80

Movement, Approach, & Intersection Results

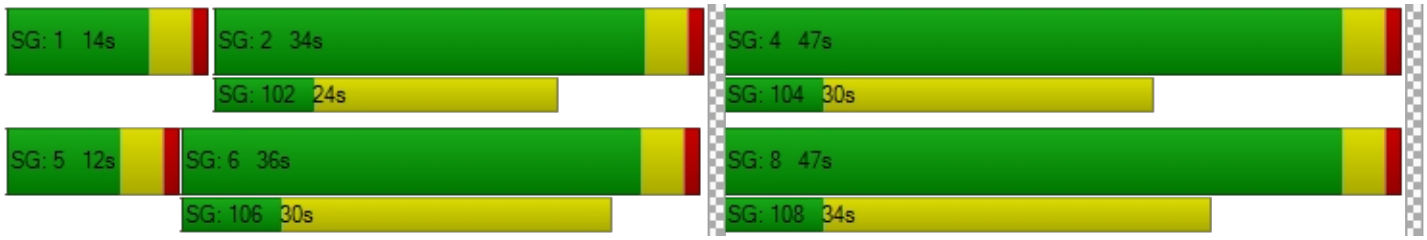
d_M, Delay for Movement [s/veh]	32.02	32.26	33.24	38.69	32.52	42.04	53.77	11.02	11.57	51.75	11.90	9.58
Movement LOS	C	C	C	D	C	D	D	B	B	D	B	A
d_A, Approach Delay [s/veh]	32.70			38.78			14.41			13.65		
Approach LOS	C			D			B			B		
d_I, Intersection Delay [s/veh]	18.48											
Intersection LOS	B											
Intersection V/C	0.625											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	37.15	37.15	37.15	37.15
l_p,int, Pedestrian LOS Score for Intersection	2.402	2.529	3.184	3.560
Crosswalk LOS	B	B	C	D
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	905	905	631	673
d_b, Bicycle Delay [s]	14.24	14.24	22.25	20.90
l_b,int, Bicycle LOS Score for Intersection	1.898	2.139	2.457	2.760
Bicycle LOS	A	B	B	C

Sequence

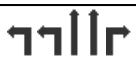
Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: Brea Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	37.5
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.797

Intersection Setup

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	504	802	243	205	629	175	187	1650	405	224	1687	138
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	504	802	243	205	629	175	187	1650	405	224	1687	138
Peak Hour Factor	0.9630	0.9630	0.9630	0.9380	0.9380	0.9380	0.9710	0.9710	0.9710	0.9670	0.9670	0.9670
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	131	208	63	55	168	47	48	425	104	58	436	36
Total Analysis Volume [veh/h]	523	833	252	219	671	187	193	1699	417	232	1745	143
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	25	50	0	14	39	0	12	43	0	13	44	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	30	0	0	28	0	0	30	0	0	30	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	20	35	35	9	24	24	8	51	51	9	52	52
g / C, Green / Cycle	0.17	0.29	0.29	0.08	0.20	0.20	0.07	0.42	0.42	0.08	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.15	0.15	0.13	0.06	0.18	0.10	0.06	0.30	0.22	0.07	0.31	0.08
s, saturation flow rate [veh/h]	3500	5700	1900	3500	3800	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	581	1660	553	277	776	388	236	2399	800	265	2446	815
d1, Uniform Delay [s]	49.09	35.32	34.77	54.32	46.17	42.16	55.27	28.69	25.80	54.93	28.19	21.16
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.38	0.24	0.59	5.07	3.05	0.93	6.87	1.80	2.43	8.96	1.81	0.47
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.90	0.50	0.46	0.79	0.86	0.48	0.82	0.71	0.52	0.88	0.71	0.18
d, Delay for Lane Group [s/veh]	54.47	35.56	35.36	59.39	49.21	43.09	62.14	30.48	28.22	63.90	30.00	21.62
Lane Group LOS	D	D	D	E	D	D	E	C	C	E	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	8.10	6.78	6.12	3.45	9.97	5.01	3.11	13.64	9.30	3.80	13.93	2.60
50th-Percentile Queue Length [ft/ln]	202.46	169.58	152.96	86.15	249.14	125.15	77.69	340.91	232.61	95.04	348.26	65.01
95th-Percentile Queue Length [veh/ln]	12.77	11.05	10.17	6.20	15.14	8.68	5.59	19.69	14.31	6.84	20.05	4.68
95th-Percentile Queue Length [ft/ln]	319.14	276.37	254.37	155.06	378.57	216.88	139.84	492.31	357.67	171.07	501.29	117.02

Movement, Approach, & Intersection Results

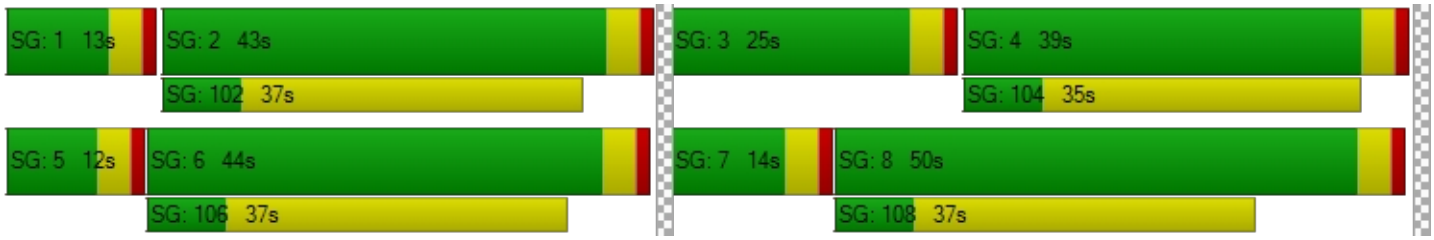
d_M, Delay for Movement [s/veh]	54.47	35.56	35.36	59.39	49.21	43.09	62.14	30.48	28.22	63.90	30.00	21.62
Movement LOS	D	D	D	E	D	D	E	C	C	E	C	C
d_A, Approach Delay [s/veh]	41.68			50.22			32.72			33.15		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	37.52											
Intersection LOS	D											
Intersection V/C	0.797											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.52	49.52	49.52	49.52
l_p,int, Pedestrian LOS Score for Intersection	3.096	3.013	3.379	3.328
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	766	583	650	666
d_b, Bicycle Delay [s]	22.83	30.12	27.35	26.68
l_b,int, Bicycle LOS Score for Intersection	2.444	2.448	2.830	2.726
Bicycle LOS	B	B	C	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 13: Randolph Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	23.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.694

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	43	33	59	314	24	208	245	1593	27	56	1841	322
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	43	33	59	314	24	208	245	1593	27	56	1841	322
Peak Hour Factor	0.8890	0.8890	0.8890	0.8820	0.8820	0.8820	0.9540	0.9540	0.9540	0.9450	0.9450	0.9450
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	9	17	89	7	59	64	417	7	15	487	85
Total Analysis Volume [veh/h]	48	37	66	356	27	236	257	1670	28	59	1948	341
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	10	0	0	41	0	14	44	0	10	40	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	29	0	0	28	0	0	29	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	105	105	105	105	105	105	105	105	105	105	105
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	6	6	18	18	10	60	60	5	56	56
g / C, Green / Cycle	0.06	0.06	0.06	0.17	0.17	0.09	0.57	0.57	0.05	0.53	0.53
(v / s)_i Volume / Saturation Flow Rate	0.03	0.02	0.03	0.10	0.14	0.07	0.29	0.31	0.03	0.34	0.18
s, saturation flow rate [veh/h]	1800	1800	1900	3500	1900	3500	3800	1900	1800	5700	1900
c, Capacity [veh/h]	103	103	109	595	323	323	2176	1088	86	3012	1004
d1, Uniform Delay [s]	47.99	47.69	48.39	40.32	42.04	46.75	13.59	13.83	49.26	17.75	14.24
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.24	2.09	5.34	0.97	5.01	4.50	0.87	1.88	9.16	1.09	0.92
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.47	0.36	0.61	0.60	0.81	0.80	0.51	0.53	0.68	0.65	0.34
d, Delay for Lane Group [s/veh]	51.23	49.78	53.73	41.29	47.05	51.25	14.45	15.72	58.42	18.84	15.16
Lane Group LOS	D	D	D	D	D	D	B	B	E	B	B
Critical Lane Group	No	No	Yes	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.31	0.99	1.85	4.31	6.97	3.48	7.81	8.58	1.74	11.00	4.76
50th-Percentile Queue Length [ft/ln]	32.70	24.77	46.16	107.78	174.16	86.94	195.24	214.50	43.48	275.04	119.09
95th-Percentile Queue Length [veh/ln]	2.35	1.78	3.32	7.72	11.30	6.26	12.39	13.38	3.13	16.44	8.34
95th-Percentile Queue Length [ft/ln]	58.86	44.59	83.08	192.91	282.38	156.49	309.82	334.60	78.27	411.03	208.57

Movement, Approach, & Intersection Results

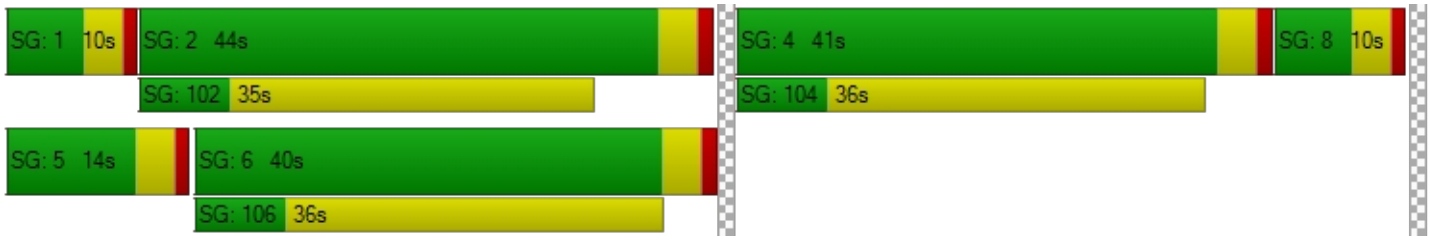
d_M, Delay for Movement [s/veh]	51.23	49.78	53.73	41.29	47.05	47.05	51.25	14.87	15.72	58.42	18.84	15.16
Movement LOS	D	D	D	D	D	D	D	B	B	E	B	B
d_A, Approach Delay [s/veh]	51.97			43.74			19.67			19.30		
Approach LOS	D			D			B			B		
d_I, Intersection Delay [s/veh]	23.40											
Intersection LOS	C											
Intersection V/C	0.694											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	42.11	42.11	42.11	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.203	2.552	3.243	0.000
Crosswalk LOS	B	B	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	114	704	761	685
d_b, Bicycle Delay [s]	46.70	22.05	20.14	22.70
l_b,int, Bicycle LOS Score for Intersection	1.684	2.581	2.635	2.851
Bicycle LOS	A	B	B	C

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 14: State College Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	56.0
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.960

Intersection Setup

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	351	536	344	417	275	93	107	1759	91	439	1787	465
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	351	536	344	417	275	93	107	1759	91	439	1787	465
Peak Hour Factor	0.8990	0.8990	0.8990	0.8970	0.8970	0.8970	0.9570	0.9570	0.9570	0.9550	0.9550	0.9550
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	98	149	96	116	77	26	28	460	24	115	468	122
Total Analysis Volume [veh/h]	390	596	383	465	307	104	112	1838	95	460	1871	487
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	18	44	0	25	51	0	13	34	0	17	38	38
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	30	0	0	28	0	0	23	0	0	23	23
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	14	28	28	21	35	35	6	42	42	13	49	74
g / C, Green / Cycle	0.12	0.23	0.23	0.18	0.29	0.29	0.05	0.35	0.35	0.11	0.41	0.62
(v / s)_i Volume / Saturation Flow Rate	0.11	0.16	0.20	0.23	0.11	0.10	0.03	0.25	0.27	0.13	0.33	0.26
s, saturation flow rate [veh/h]	3500	3800	1900	2000	1900	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	410	878	439	350	549	549	174	2004	668	381	2342	1177
d1, Uniform Delay [s]	52.66	42.09	44.45	49.51	34.19	33.83	56.02	33.66	34.42	53.50	31.02	11.70
k, delay calibration	0.11	0.11	0.17	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.99	0.93	8.24	151.54	0.45	0.39	3.98	2.18	7.90	99.04	2.96	1.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.95	0.68	0.87	1.33	0.39	0.36	0.65	0.71	0.76	1.21	0.80	0.41
d, Delay for Lane Group [s/veh]	64.65	43.02	52.69	201.06	34.64	34.22	60.00	35.84	42.32	152.54	33.98	12.77
Lane Group LOS	E	D	D	F	C	C	E	D	D	F	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	6.51	8.16	11.92	12.60	5.10	4.62	1.76	12.27	14.41	10.98	16.18	6.76
50th-Percentile Queue Length [ft/ln]	162.78	203.90	298.04	315.12	127.61	115.49	44.08	306.85	360.15	274.38	404.60	169.09
95th-Percentile Queue Length [veh/ln]	10.70	12.84	17.58	20.73	8.81	8.14	3.17	18.02	20.63	17.62	22.78	11.03
95th-Percentile Queue Length [ft/ln]	267.40	320.99	439.60	518.20	220.24	203.62	79.34	450.49	515.77	440.49	569.54	275.72

Movement, Approach, & Intersection Results

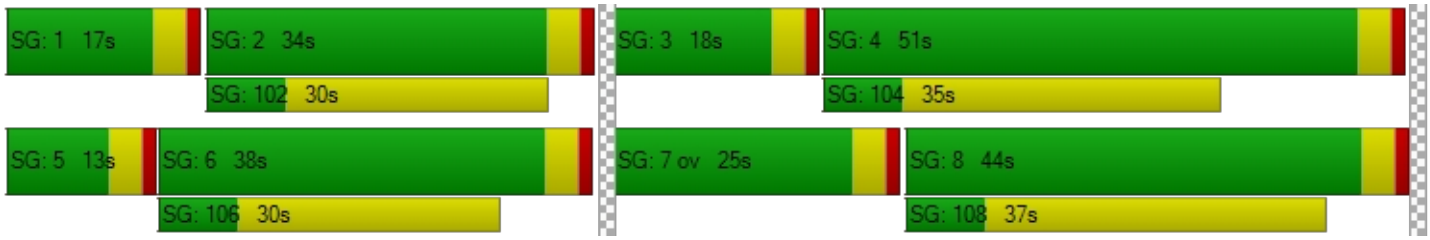
d_M, Delay for Movement [s/veh]	64.65	43.02	52.69	201.06	34.52	34.22	60.00	37.30	42.32	152.54	33.98	12.77
Movement LOS	E	D	D	F	C	C	E	D	D	F	C	B
d_A, Approach Delay [s/veh]	51.89			122.88			38.77			49.67		
Approach LOS	D			F			D			D		
d_I, Intersection Delay [s/veh]	55.98											
Intersection LOS	E											
Intersection V/C	0.960											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.52	49.52	49.52	49.52
l_p,int, Pedestrian LOS Score for Intersection	2.918	2.803	3.341	3.517
Crosswalk LOS	C	C	C	D
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	666	783	500	567
d_b, Bicycle Delay [s]	26.68	22.22	33.76	30.83
l_b,int, Bicycle LOS Score for Intersection	2.689	2.282	2.403	3.110
Bicycle LOS	B	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 15: SR-57 SB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	15.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.691

Intersection Setup

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	0	0	0	651	0	522	0	1637	902	0	2170	386
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	651	0	522	0	1637	902	0	2170	386
Peak Hour Factor	1.0000	1.0000	1.0000	0.9390	1.0000	0.9390	1.0000	0.9540	0.9540	1.0000	0.9730	0.9730
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	173	0	139	0	429	236	0	558	99
Total Analysis Volume [veh/h]	0	0	0	693	0	556	0	1716	945	0	2230	397
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	7	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	6	0	0	0	6	0	0	6	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	64	0	0	0	26	0	0	26	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	15	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	C
C, Cycle Length [s]		90	90	90	90	90
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		26	26	26	56	56
g / C, Green / Cycle		0.29	0.29	0.29	0.63	0.63
(v / s)_i Volume / Saturation Flow Rate		0.24	0.24	0.22	0.30	0.39
s, saturation flow rate [veh/h]		1750	1750	1900	5700	5700
c, Capacity [veh/h]		499	499	542	3566	3566
d1, Uniform Delay [s]		30.11	30.11	29.38	9.00	10.34
k, delay calibration		0.11	0.11	0.11	0.50	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		3.73	3.73	2.33	0.47	0.84
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.83	0.83	0.77	0.48	0.63
d, Delay for Lane Group [s/veh]		33.84	33.84	31.71	9.47	11.17
Lane Group LOS		C	C	C	A	B
Critical Lane Group		Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]		8.69	8.69	8.32	5.45	8.19
50th-Percentile Queue Length [ft/ln]		217.15	217.15	208.06	136.37	204.63
95th-Percentile Queue Length [veh/ln]		13.52	13.52	13.05	9.29	12.88
95th-Percentile Queue Length [ft/ln]		337.98	337.98	326.34	232.13	321.94

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	33.84	0.00	32.24	0.00	9.47	0.00	0.00	11.17	0.00
Movement LOS				C		C		A			B	
d_A, Approach Delay [s/veh]	0.00			33.13			9.47			11.17		
Approach LOS	A			C			A			B		
d_I, Intersection Delay [s/veh]	15.89											
Intersection LOS	B											
Intersection V/C	0.691											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	34.63	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	2.435	0.000	0.000
Crosswalk LOS	F	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1335	489	489
d_b, Bicycle Delay [s]	44.96	4.98	25.65	25.65
l_b,int, Bicycle LOS Score for Intersection	4.132	3.620	2.503	2.786
Bicycle LOS	D	D	B	C

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 16: SR-57 NB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	22.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.731

Intersection Setup

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	886	72	408	0	0	231	206	1738	360	0	2267	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	886	72	408	0	0	231	206	1738	360	0	2267	46
Peak Hour Factor	0.9490	0.9490	0.9490	1.0000	1.0000	0.8840	0.9510	0.9510	0.9510	1.0000	0.9830	0.9830
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	233	19	107	0	0	65	54	457	95	0	577	12
Total Analysis Volume [veh/h]	934	76	430	0	0	261	217	1828	379	0	2306	47
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Overlap	Protecte	Permiss	Unsigna	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	0	5	5	2	0	0	6	0
Auxiliary Signal Groups						5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	6	0	0	0	6	6	6	0	0	6	0
Maximum Green [s]	0	30	0	0	0	30	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	1.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	36	0	0	0	29	29	59	0	0	30	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	22	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No				No		No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No				No	No	No			No	
Maximum Recall		No				No	No	No			No	
Pedestrian Recall		No				No	No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	R	L	C	C	C
C, Cycle Length [s]	95	95	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	24	24	24	14	14	63	45	45
g / C, Green / Cycle	0.26	0.26	0.26	0.15	0.15	0.66	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.20	0.21	0.19	0.07	0.12	0.32	0.31	0.31
s, saturation flow rate [veh/h]	3500	1750	1900	3800	1800	5700	5700	1900
c, Capacity [veh/h]	897	449	487	564	267	3759	2674	891
d1, Uniform Delay [s]	32.96	33.21	32.53	37.01	39.19	8.11	19.40	19.40
k, delay calibration	0.11	0.17	0.14	0.11	0.11	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.61	5.72	2.97	0.59	5.91	0.45	1.30	3.82
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.81	0.75	0.46	0.81	0.49	0.66	0.66
d, Delay for Lane Group [s/veh]	34.57	38.93	35.50	37.60	45.11	8.56	20.69	23.22
Lane Group LOS	C	D	D	D	D	A	C	C
Critical Lane Group	No	Yes	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	7.65	8.44	7.98	2.79	5.27	5.63	9.80	10.42
50th-Percentile Queue Length [ft/ln]	191.27	211.09	199.38	69.82	131.87	140.73	244.90	260.55
95th-Percentile Queue Length [veh/ln]	12.19	13.21	12.61	5.03	9.04	9.52	14.93	15.72
95th-Percentile Queue Length [ft/ln]	304.67	330.22	315.16	125.68	226.03	238.01	373.22	392.91

Movement, Approach, & Intersection Results

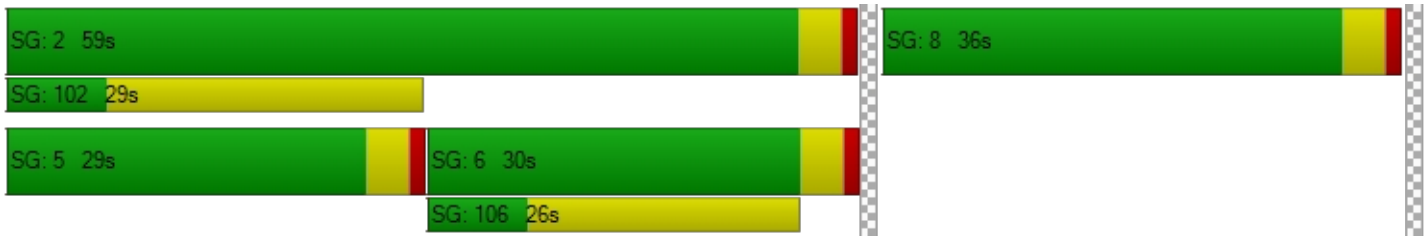
d_M, Delay for Movement [s/veh]	35.59	38.93	36.06	0.00	0.00	37.60	45.11	8.56	0.00	0.00	21.29	23.22
Movement LOS	D	D	D			D	D	A			C	C
d_A, Approach Delay [s/veh]	35.91			37.60			12.44			21.32		
Approach LOS	D			D			B			C		
d_I, Intersection Delay [s/veh]	22.49											
Intersection LOS	C											
Intersection V/C	0.731											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	37.14	37.14	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.583	2.138	0.000	0.000
Crosswalk LOS	B	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	674	526	1158	547
d_b, Bicycle Delay [s]	20.90	25.80	8.43	25.06
l_b,int, Bicycle LOS Score for Intersection	3.936	1.560	2.684	2.530
Bicycle LOS	D	A	B	B

Sequence

Ring 1	-	2	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 17: Associated Road at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	40.7
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.850

Intersection Setup

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	211	252	82	284	339	218	247	1745	137	170	1641	166
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	211	252	82	284	339	218	247	1745	137	170	1641	166
Peak Hour Factor	0.9100	0.9100	0.9100	0.8290	0.8290	0.8290	0.9480	0.9480	0.9480	0.9350	0.9350	0.9350
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	58	69	23	86	102	66	65	460	36	45	439	44
Total Analysis Volume [veh/h]	232	277	90	343	409	263	261	1841	145	182	1755	178
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	13	39	0	17	43	0	23	47	0	17	41	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	28	0	0	29	0	0	26	0	0	25	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	25	25	13	29	29	19	53	53	13	47	47
g / C, Green / Cycle	0.08	0.20	0.20	0.11	0.24	0.24	0.16	0.44	0.44	0.11	0.39	0.39
(v / s)_i Volume / Saturation Flow Rate	0.07	0.10	0.09	0.10	0.22	0.14	0.15	0.35	0.35	0.10	0.25	0.26
s, saturation flow rate [veh/h]	3500	1900	1900	3500	1900	1900	1800	3800	1900	1800	5700	1900
c, Capacity [veh/h]	267	389	389	383	452	452	286	1684	842	197	2244	748
d1, Uniform Delay [s]	54.89	42.19	41.85	52.82	44.44	40.47	49.70	28.47	28.81	53.01	29.53	29.89
k, delay calibration	0.11	0.11	0.11	0.11	0.21	0.11	0.14	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.44	0.95	0.83	7.57	12.51	1.19	13.87	3.66	7.78	16.38	1.42	4.61
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.87	0.49	0.45	0.90	0.90	0.58	0.91	0.78	0.80	0.92	0.64	0.66
d, Delay for Lane Group [s/veh]	63.33	43.14	42.68	60.39	56.94	41.66	63.57	32.13	36.60	69.39	30.95	34.50
Lane Group LOS	E	D	D	E	E	D	E	C	D	E	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.78	5.10	4.69	5.50	13.31	7.03	8.79	16.58	18.09	6.33	11.38	12.59
50th-Percentile Queue Length [ft/ln]	94.62	127.50	117.36	137.62	332.80	175.64	219.69	414.39	452.37	158.23	284.49	314.66
95th-Percentile Queue Length [veh/ln]	6.81	8.80	8.25	9.35	19.30	11.37	13.65	23.25	25.07	10.46	16.91	18.40
95th-Percentile Queue Length [ft/ln]	170.31	220.08	206.20	233.81	482.39	284.31	341.23	581.32	626.78	261.38	422.80	460.11

Movement, Approach, & Intersection Results

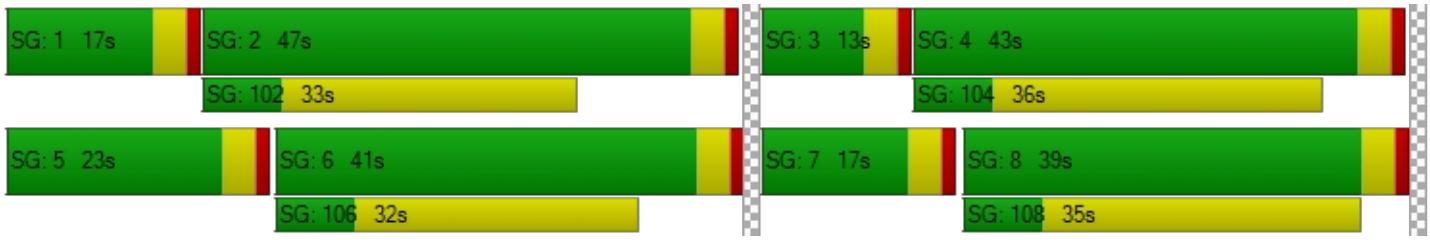
d_M, Delay for Movement [s/veh]	63.33	42.99	42.68	60.39	56.94	41.66	63.57	33.41	36.60	69.39	31.59	34.50
Movement LOS	E	D	D	E	E	D	E	C	D	E	C	C
d_A, Approach Delay [s/veh]	50.82			54.15			37.12			35.09		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	40.67											
Intersection LOS	D											
Intersection V/C	0.850											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.54	49.54	49.54	49.54
l_p,int, Pedestrian LOS Score for Intersection	2.574	2.748	3.287	3.274
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	583	650	716	616
d_b, Bicycle Delay [s]	30.13	27.37	24.73	28.73
l_b,int, Bicycle LOS Score for Intersection	2.054	3.234	2.795	2.432
Bicycle LOS	B	C	C	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 18: Castlegate Lane/Placentia Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	24.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.782

Intersection Setup

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	235	46	258	24	22	14	18	1755	274	224	1806	55
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	235	46	258	24	22	14	18	1755	274	224	1806	55
Peak Hour Factor	0.8580	0.8580	0.8580	0.6480	0.6480	0.6480	0.9520	0.9520	0.9520	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	68	13	75	9	8	5	5	461	72	59	477	15
Total Analysis Volume [veh/h]	274	54	301	37	34	22	19	1843	288	237	1909	58
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	26	0	0	10	0	10	32	0	22	44	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	15	0	0	0	0	0	21	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	17	17	17	5	5	2	38	38	14	49	49
g / C, Green / Cycle	0.19	0.19	0.19	0.06	0.06	0.03	0.42	0.42	0.15	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.09	0.09	0.16	0.02	0.03	0.01	0.32	0.15	0.13	0.34	0.35
s, saturation flow rate [veh/h]	1750	1750	1900	1800	1900	1800	5700	1900	1800	3800	1900
c, Capacity [veh/h]	327	327	355	110	116	48	2396	799	277	2081	1041
d1, Uniform Delay [s]	32.86	32.91	35.42	40.57	40.94	43.18	22.40	17.86	37.16	13.99	14.28
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.17	1.21	5.61	1.77	3.05	5.23	2.45	1.27	7.41	1.41	3.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.50	0.50	0.85	0.34	0.48	0.40	0.77	0.36	0.85	0.62	0.65
d, Delay for Lane Group [s/veh]	34.03	34.12	41.03	42.33	43.99	48.40	24.84	19.13	44.57	15.40	17.38
Lane Group LOS	C	C	D	D	D	D	C	B	D	B	B
Critical Lane Group	No	No	Yes	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.24	3.29	6.80	0.83	1.29	0.48	11.08	4.22	5.57	8.67	9.65
50th-Percentile Queue Length [ft/ln]	81.01	82.34	169.94	20.83	32.22	12.06	276.97	105.50	139.15	216.72	241.28
95th-Percentile Queue Length [veh/ln]	5.83	5.93	11.07	1.50	2.32	0.87	16.54	7.59	9.43	13.50	14.75
95th-Percentile Queue Length [ft/ln]	145.81	148.21	276.83	37.49	57.99	21.70	413.43	189.73	235.87	337.43	368.65

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.07	34.12	41.03	42.33	43.99	43.99	48.40	24.84	19.13	44.57	16.04	17.38
Movement LOS	C	C	D	D	D	D	D	C	B	D	B	B
d_A, Approach Delay [s/veh]	37.40			43.33			24.29			19.14		
Approach LOS	D			D			C			B		
d_I, Intersection Delay [s/veh]	24.03											
Intersection LOS	C											
Intersection V/C	0.782											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.72	34.72	0.00	34.72
l_p,int, Pedestrian LOS Score for Intersection	2.420	2.013	0.000	3.204
Crosswalk LOS	B	B	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	488	133	622	888
d_b, Bicycle Delay [s]	25.73	39.24	21.40	13.92
l_b,int, Bicycle LOS Score for Intersection	2.597	1.713	2.742	2.772
Bicycle LOS	B	A	B	C

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Brea Mall Expansion, Brea

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Report File: N:\...\Sat Ex.pdf

Scenario 3 Sat MD Existing
4/12/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State College Boulevard at Lambert Road	Signalized	HCM 6th Edition	WB Left	0.772	35.7	D
2	SR-57 SB Ramps at Lambert Road	Signalized	HCM 6th Edition	WB Left	0.773	25.1	C
3	SR-57 NB Ramps at Lambert Road	Signalized	HCM 6th Edition	EB Left	0.726	24.9	C
4	Randolph Avenue at Birch Street	Signalized	HCM 6th Edition	EB Left	0.445	20.0	C
5	State College Boulevard at Birch Street	Signalized	HCM 6th Edition	EB Left	0.691	37.3	D
6	S Associated Road at Birch Street	Signalized	HCM 6th Edition	EB Left	0.548	22.3	C
7	Randolph Avenue at Madison Way	Signalized	HCM 6th Edition	WB Left	0.246	20.5	C
8	Randolph Avenue at Brea Mall	Signalized	HCM 6th Edition	EB Left	0.469	22.7	C
9	Brea Mall South at State College Boulevard	Signalized	HCM 6th Edition	WB Left	0.785	32.8	C
10	Harbor Boulevard at Imperial Highway	Signalized	HCM 6th Edition	SB Left	0.705	38.7	D
11	Puente Street at Imperial Highway	Signalized	HCM 6th Edition	WB Left	0.436	13.0	B
12	Brea Boulevard at Imperial Highway	Signalized	HCM 6th Edition	EB Left	0.845	40.3	D
13	Randolph Avenue at Imperial Highway	Signalized	HCM 6th Edition	WB Left	0.810	36.2	D
14	State College Boulevard at Imperial Highway	Signalized	HCM 6th Edition	SB Left	1.241	111.9	F
15	SR-57 SB Ramps at Imperial Highway	Signalized	HCM 6th Edition	SB Left	0.771	17.5	B
16	SR-57 NB Ramps at Imperial Highway	Signalized	HCM 6th Edition	EB Left	0.871	36.5	D
17	Associated Road at Imperial Highway	Signalized	HCM 6th Edition	WB Left	0.767	34.5	C
18	Castlegate Lane/Placentia	Signalized	HCM 6th	EB Left	0.750	20.8	C

16	Avenue at Imperial Highway	Signalized	Edition	EB Left	0.750	20.8	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: State College Boulevard at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	35.7
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.772

Intersection Setup

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	128	247	318	496	351	5	18	970	259	650	1334	689
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	128	247	318	496	351	5	18	970	259	650	1334	689
Peak Hour Factor	0.9010	0.9010	0.9010	0.8760	0.8760	0.8760	0.8390	0.8390	0.8390	0.9650	0.9650	0.9650
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	69	88	142	100	1	5	289	77	168	346	178
Total Analysis Volume [veh/h]	142	274	353	566	401	6	21	1156	309	674	1382	714
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	10	29	0	25	44	0	10	39	0	27	56	56
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	0	0	0	33	0	0	28	0	0	22	22
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	6	17	17	17	21	32	32	3	43	43	23	63	88
g / C, Green / Cycle	0.05	0.14	0.14	0.14	0.18	0.27	0.27	0.03	0.36	0.36	0.19	0.52	0.73
(v / s)_i Volume / Saturation Flow Rate	0.04	0.12	0.11	0.10	0.16	0.11	0.11	0.01	0.19	0.19	0.19	0.24	0.38
s, saturation flow rate [veh/h]	3500	1900	1900	1900	3500	1900	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	178	274	274	274	613	511	511	91	2026	675	671	2970	1386
d1, Uniform Delay [s]	56.38	49.97	49.19	49.01	48.72	35.96	35.94	57.28	30.97	30.69	48.52	18.17	7.03
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.01	6.58	3.87	3.45	6.42	0.51	0.50	1.27	1.07	2.93	17.12	0.53	1.37
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.80	0.83	0.74	0.71	0.92	0.40	0.40	0.23	0.55	0.53	1.00	0.47	0.52
d, Delay for Lane Group [s/veh]	64.39	56.55	53.06	52.46	55.13	36.47	36.44	58.55	32.04	33.61	65.63	18.70	8.40
Lane Group LOS	E	E	D	D	E	D	D	E	C	C	F	B	A
Critical Lane Group	No	Yes	No	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.33	7.18	6.10	5.86	8.86	4.98	4.96	0.33	8.74	8.69	11.59	8.09	7.52
50th-Percentile Queue Length [ft/ln]	58.18	179.3	152.5	146.5	221.45	124.61	123.88	8.22	218.48	217.23	289.75	202.17	187.94
95th-Percentile Queue Length [veh/ln]	4.19	11.57	10.15	9.83	13.74	8.65	8.61	0.59	13.59	13.52	17.21	12.75	12.01
95th-Percentile Queue Length [ft/ln]	104.7	289.2	253.8	245.8	343.47	216.14	215.15	14.79	339.68	338.09	430.24	318.76	300.36

Movement, Approach, & Intersection Results

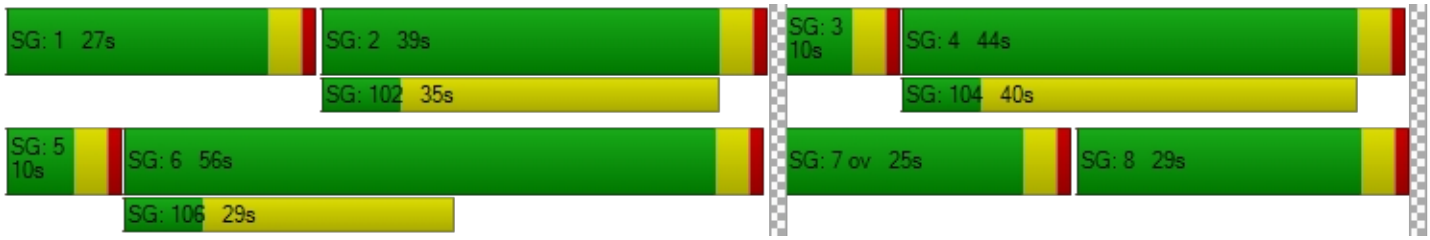
d_M, Delay for Movement [s/veh]	64.39	55.98	52.71	55.13	36.45	36.44	58.55	32.10	33.61	65.63	18.70	8.40
Movement LOS	E	E	D	E	D	D	E	C	C	F	B	A
d_A, Approach Delay [s/veh]	56.04			47.32			32.79			27.46		
Approach LOS	E			D			C			C		
d_I, Intersection Delay [s/veh]	35.67											
Intersection LOS	D											
Intersection V/C	0.772											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.52	49.52	49.52	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.908	2.789	3.190	0.000
Crosswalk LOS	C	C	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	417	666	583	866
d_b, Bicycle Delay [s]	37.62	26.68	30.12	19.28
l_b,int, Bicycle LOS Score for Intersection	2.194	2.362	2.173	3.083
Bicycle LOS	B	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: SR-57 SB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	25.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.773

Intersection Setup

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	0	0	0	794	0	1020	0	1250	520	165	1654	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	794	0	1020	0	1250	520	165	1654	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9460	1.0000	0.9460	1.0000	0.9230	0.9230	0.9510	0.9510	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	210	0	270	0	339	141	43	435	0
Total Analysis Volume [veh/h]	0	0	0	839	0	1078	0	1354	563	174	1739	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	7	0	0	0	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	6	0	0	0	6	0	6	6	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	57	0	0	0	23	0	10	33	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	12	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall				No				No		No	No	
Maximum Recall				No				No		No	No	
Pedestrian Recall				No				No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	C	R	L	C
C, Cycle Length [s]		90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		38	38	38	34	34	34	6	44
g / C, Green / Cycle		0.43	0.43	0.43	0.37	0.37	0.37	0.07	0.48
(v / s)_i Volume / Saturation Flow Rate		0.37	0.37	0.34	0.25	0.25	0.25	0.05	0.31
s, saturation flow rate [veh/h]		1750	1750	1900	3800	1900	1900	3500	5700
c, Capacity [veh/h]		746	746	810	1416	708	708	237	2764
d1, Uniform Delay [s]		23.34	23.34	22.33	23.69	23.69	23.69	41.18	17.20
k, delay calibration		0.18	0.18	0.15	0.50	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		4.94	4.94	2.39	2.61	5.14	5.14	4.38	1.10
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.86	0.86	0.79	0.68	0.68	0.68	0.73	0.63
d, Delay for Lane Group [s/veh]		28.28	28.28	24.72	26.30	28.83	28.83	45.57	18.29
Lane Group LOS		C	C	C	C	C	C	D	B
Critical Lane Group		Yes	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]		12.56	12.56	11.58	8.71	9.21	9.21	2.02	8.62
50th-Percentile Queue Length [ft/ln]		314.09	314.09	289.42	217.73	230.15	230.15	50.39	215.47
95th-Percentile Queue Length [veh/ln]		18.38	18.38	17.16	13.55	14.18	14.18	3.63	13.43
95th-Percentile Queue Length [ft/ln]		459.41	459.41	428.92	338.72	354.55	354.55	90.71	335.84

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	28.28	0.00	26.17	0.00	26.45	28.83	45.57	18.29	0.00
Movement LOS				C		C		C	C	D	B	
d_A, Approach Delay [s/veh]	0.00			27.09			27.57			20.77		
Approach LOS	A			C			C			C		
d_I, Intersection Delay [s/veh]	25.15											
Intersection LOS	C											
Intersection V/C	0.773											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.074	2.563	0.000	0.000
Crosswalk LOS	B	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1177	422	644
d_b, Bicycle Delay [s]	45.01	7.61	28.02	20.68
l_b,int, Bicycle LOS Score for Intersection	4.132	4.723	2.614	2.612
Bicycle LOS	D	E	B	B

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 3: SR-57 NB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	24.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.726

Intersection Setup

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	1031	0	421	0	0	0	539	1510	0	0	788	399
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1031	0	421	0	0	0	539	1510	0	0	788	399
Peak Hour Factor	0.9860	1.0000	0.9860	1.0000	1.0000	1.0000	0.9080	0.9080	1.0000	1.0000	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	261	0	107	0	0	0	148	416	0	0	210	106
Total Analysis Volume [veh/h]	1046	0	427	0	0	0	594	1663	0	0	838	424
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	0	0	0	0	0	5	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	6	0	0	0	0	0	6	6	0	0	6	0
Maximum Green [s]	30	0	0	0	0	0	30	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	46	0	0	0	0	0	28	49	0	0	21	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	7	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	14	0	0	0	0	0	0	16	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No						No	No			No	
Maximum Recall	No						No	No			No	
Pedestrian Recall	No						No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R		L	C	C	C	R
C, Cycle Length [s]	95	95		95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	33	33		19	54	31	31	31
g / C, Green / Cycle	0.35	0.35		0.20	0.57	0.33	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.30	0.22		0.17	0.29	0.17	0.17	0.17
s, saturation flow rate [veh/h]	3500	1900		3500	5700	3800	1900	1900
c, Capacity [veh/h]	1212	658		690	3246	1255	628	628
d1, Uniform Delay [s]	28.96	26.19		36.88	12.43	25.56	25.56	25.56
k, delay calibration	0.11	0.11		0.11	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.96	1.09		3.31	0.58	1.44	2.86	2.86
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.86	0.65		0.86	0.51	0.50	0.50	0.50
d, Delay for Lane Group [s/veh]	30.92	27.28		40.19	13.01	27.00	28.42	28.42
Lane Group LOS	C	C		D	B	C	C	C
Critical Lane Group	Yes	No		Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	11.05	8.11		6.87	6.81	5.85	6.09	6.09
50th-Percentile Queue Length [ft/ln]	276.26	202.86		171.64	170.19	146.13	152.33	152.33
95th-Percentile Queue Length [veh/ln]	16.50	12.79		11.16	11.09	9.81	10.14	10.14
95th-Percentile Queue Length [ft/ln]	412.55	319.65		279.07	277.16	245.26	253.54	253.54

Movement, Approach, & Intersection Results

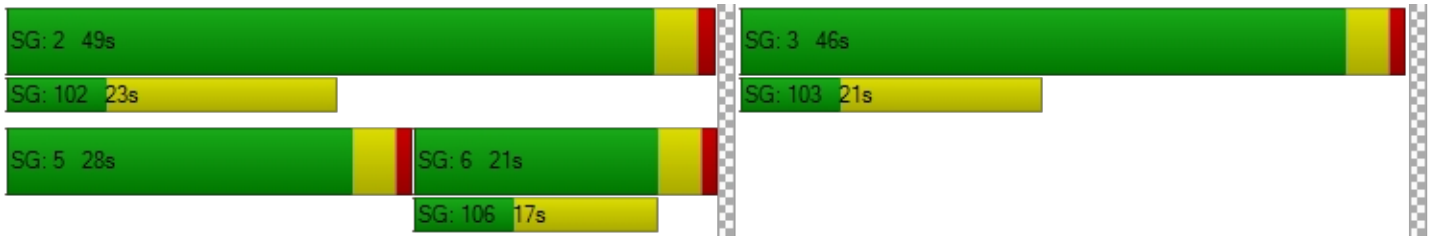
d_M, Delay for Movement [s/veh]	30.92	0.00	27.28	0.00	0.00	0.00	40.19	13.01	0.00	0.00	27.00	28.42
Movement LOS	C		C				D	B			C	C
d_A, Approach Delay [s/veh]	29.87			0.00			20.16			27.71		
Approach LOS	C			A			C			C		
d_I, Intersection Delay [s/veh]	24.93											
Intersection LOS	C											
Intersection V/C	0.726											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	37.14	37.14	0.00	37.14
l_p,int, Pedestrian LOS Score for Intersection	2.421	2.213	0.000	3.063
Crosswalk LOS	B	B	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	884	0	947	358
d_b, Bicycle Delay [s]	14.79	47.51	13.16	32.03
l_b,int, Bicycle LOS Score for Intersection	1.560	4.132	2.801	2.254
Bicycle LOS	A	D	C	B

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Randolph Avenue at Birch Street

Control Type:	Signalized	Delay (sec / veh):	20.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.445

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Base Volume Input [veh/h]	96	74	168	54	37	77	86	564	121	146	710	25
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	96	74	168	54	37	77	86	564	121	146	710	25
Peak Hour Factor	0.8630	0.8630	0.8630	0.7790	0.7790	0.7790	0.9320	0.9320	0.9320	0.9670	0.9670	0.9670
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	21	49	17	12	25	23	151	32	38	184	6
Total Analysis Volume [veh/h]	111	86	195	69	47	99	92	605	130	151	734	26
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	38	0	0	38	0	23	30	0	22	29	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	25	0	0	19	0	0	18	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	12	12	12	12	6	57	57	9	60	60
g / C, Green / Cycle	0.13	0.13	0.13	0.13	0.13	0.07	0.63	0.63	0.10	0.67	0.67
(v / s)_i Volume / Saturation Flow Rate	0.06	0.05	0.10	0.04	0.08	0.05	0.20	0.19	0.08	0.19	0.01
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1800	1900	1900	1800	3800	1900
c, Capacity [veh/h]	157	251	251	213	251	123	1196	1196	190	2533	1266
d1, Uniform Delay [s]	36.17	35.55	37.82	35.29	36.76	41.22	7.72	7.61	39.36	6.21	5.08
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.66	0.81	5.15	0.88	2.13	8.77	0.70	0.64	7.43	0.29	0.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.70	0.34	0.78	0.32	0.58	0.75	0.32	0.30	0.80	0.29	0.02
d, Delay for Lane Group [s/veh]	41.82	36.35	42.97	36.17	38.90	49.99	8.42	8.25	46.79	6.50	5.11
Lane Group LOS	D	D	D	D	D	D	A	A	D	A	A
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.48	1.75	4.45	1.40	3.13	2.28	3.24	3.00	3.61	2.57	0.15
50th-Percentile Queue Length [ft/ln]	61.90	43.83	111.32	35.09	78.21	57.04	80.93	74.96	90.18	64.21	3.84
95th-Percentile Queue Length [veh/ln]	4.46	3.16	7.91	2.53	5.63	4.11	5.83	5.40	6.49	4.62	0.28
95th-Percentile Queue Length [ft/ln]	111.42	78.90	197.83	63.16	140.77	102.67	145.67	134.93	162.33	115.57	6.90

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.82	36.35	42.97	36.17	38.90	38.90	49.99	8.36	8.25	46.79	6.50	5.11
Movement LOS	D	D	D	D	D	D	D	A	A	D	A	A
d_A, Approach Delay [s/veh]	41.19			38.02			12.97			13.14		
Approach LOS	D			D			B			B		
d_I, Intersection Delay [s/veh]	20.05											
Intersection LOS	C											
Intersection V/C	0.445											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.70	34.70	34.70	34.70
l_p,int, Pedestrian LOS Score for Intersection	2.306	2.076	2.803	2.840
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	755	755	577	555
d_b, Bicycle Delay [s]	17.44	17.44	22.78	23.49
l_b,int, Bicycle LOS Score for Intersection	2.206	1.914	2.242	2.311
Bicycle LOS	B	A	B	B

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 5: State College Boulevard at Birch Street

Control Type:	Signalized	Delay (sec / veh):	37.3
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.691

Intersection Setup

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Base Volume Input [veh/h]	123	263	176	252	549	429	225	691	162	164	656	216
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	123	263	176	252	549	429	225	691	162	164	656	216
Peak Hour Factor	0.9440	0.9440	0.9440	0.9150	0.9150	0.9150	0.9030	0.9030	0.9030	0.9260	0.9260	0.9260
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	70	47	69	150	117	62	191	45	44	177	58
Total Analysis Volume [veh/h]	130	279	186	275	600	469	249	765	179	177	708	233
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	10	39	0	26	55	0	13	39	0	11	37	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	28	0	0	30	0	0	28	0	0	26	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	115	115	115	115	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	33	33	11	38	38	9	48	48	7	46	46
g / C, Green / Cycle	0.05	0.28	0.28	0.10	0.33	0.33	0.08	0.42	0.42	0.06	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.04	0.07	0.10	0.08	0.30	0.26	0.07	0.20	0.09	0.05	0.19	0.12
s, saturation flow rate [veh/h]	3500	3800	1900	3500	1900	1900	3500	3800	1900	3500	3800	1900
c, Capacity [veh/h]	185	1074	537	349	626	626	276	1584	792	216	1518	759
d1, Uniform Delay [s]	53.60	31.95	32.82	50.60	36.94	35.08	52.56	24.50	21.61	53.37	25.50	23.65
k, delay calibration	0.11	0.11	0.11	0.11	0.23	0.16	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.76	0.13	0.38	3.95	10.54	3.58	10.43	1.06	0.66	7.56	1.03	1.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.70	0.26	0.35	0.79	0.91	0.80	0.90	0.48	0.23	0.82	0.47	0.31
d, Delay for Lane Group [s/veh]	58.36	32.08	33.20	54.55	47.48	38.66	62.99	25.56	22.27	60.93	26.53	24.70
Lane Group LOS	E	C	C	D	D	D	E	C	C	E	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.97	3.04	4.19	4.05	16.92	13.17	3.96	7.77	3.25	2.75	7.30	4.55
50th-Percentile Queue Length [ft/ln]	49.29	75.91	104.74	101.37	423.10	329.35	99.00	194.13	81.35	68.84	182.54	113.63
95th-Percentile Queue Length [veh/ln]	3.55	5.47	7.54	7.30	23.67	19.13	7.13	12.34	5.86	4.96	11.73	8.04
95th-Percentile Queue Length [ft/ln]	88.73	136.63	188.52	182.47	591.77	478.16	178.21	308.38	146.43	123.92	293.33	201.03

Movement, Approach, & Intersection Results

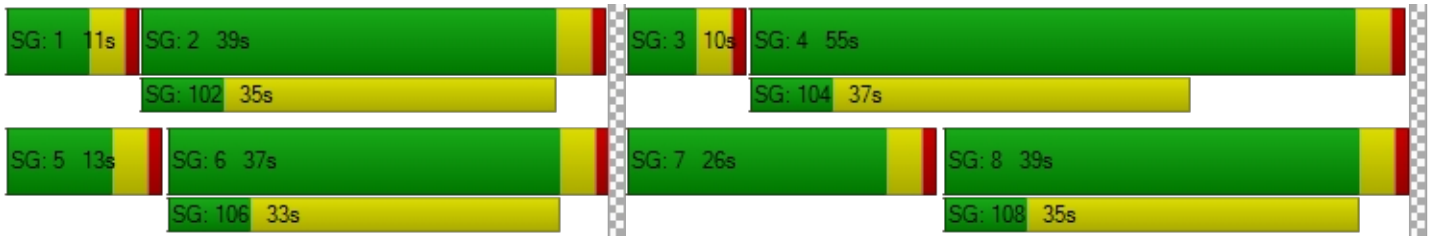
d_M, Delay for Movement [s/veh]	58.36	32.08	33.20	54.55	47.03	38.66	62.99	25.56	22.27	60.93	26.53	24.70
Movement LOS	E	C	C	D	D	D	E	C	C	E	C	C
d_A, Approach Delay [s/veh]	38.17			45.65			32.88			31.59		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	37.32											
Intersection LOS	D											
Intersection V/C	0.691											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	47.05	47.05	47.05	47.05
l_p,int, Pedestrian LOS Score for Intersection	2.822	2.807	2.954	2.932
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	608	887	608	574
d_b, Bicycle Delay [s]	27.84	17.83	27.84	29.25
l_b,int, Bicycle LOS Score for Intersection	2.050	2.668	2.544	2.482
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: S Associated Road at Birch Street

Control Type:	Signalized	Delay (sec / veh):	22.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.548

Intersection Setup

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Base Volume Input [veh/h]	318	19	167	12	21	13	8	705	334	152	689	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	318	19	167	12	21	13	8	705	334	152	689	13
Peak Hour Factor	0.9600	0.9600	0.9600	0.7170	0.7170	0.7170	0.9350	0.9350	0.9350	0.9260	0.9260	0.9260
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	83	5	43	4	7	5	2	189	89	41	186	4
Total Analysis Volume [veh/h]	331	20	174	17	29	18	9	754	357	164	744	14
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	8	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups			1,8									
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	6	0	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	30	0	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	33	70	70	0	37	0	10	38	0	12	40	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	26	26	0	26	0	0	27	0	0	26	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No		No		No	No		No	No	
Maximum Recall	No	No	No		No		No	No		No	No	
Pedestrian Recall	No	No	No		No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	23	35	5	5	2	77	77	8	83	83
g / C, Green / Cycle	0.12	0.19	0.29	0.04	0.04	0.01	0.64	0.64	0.07	0.69	0.69
(v / s)_i Volume / Saturation Flow Rate	0.09	0.01	0.09	0.01	0.02	0.01	0.31	0.28	0.05	0.20	0.20
s, saturation flow rate [veh/h]	3500	1900	1900	1800	1900	1800	1900	1900	3500	1900	1900
c, Capacity [veh/h]	407	369	559	98	85	24	1214	1214	234	1316	1316
d1, Uniform Delay [s]	51.77	39.40	32.89	55.32	56.18	58.71	11.31	10.81	54.81	7.09	7.08
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.98	0.06	0.31	0.84	5.60	9.22	1.38	1.12	3.75	0.56	0.55
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.81	0.05	0.31	0.17	0.56	0.37	0.48	0.43	0.70	0.29	0.29
d, Delay for Lane Group [s/veh]	55.75	39.46	33.21	56.15	61.79	67.93	12.69	11.93	58.57	7.65	7.63
Lane Group LOS	E	D	C	E	E	E	B	B	E	A	A
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.08	0.49	4.00	0.52	1.53	0.33	8.21	7.00	2.55	3.70	3.67
50th-Percentile Queue Length [ft/ln]	127.09	12.28	100.12	13.00	38.20	8.34	205.29	175.06	63.76	92.41	91.65
95th-Percentile Queue Length [veh/ln]	8.78	0.88	7.21	0.94	2.75	0.60	12.91	11.34	4.59	6.65	6.60
95th-Percentile Queue Length [ft/ln]	219.53	22.10	180.22	23.40	68.76	15.00	322.78	283.55	114.77	166.33	164.98

Movement, Approach, & Intersection Results

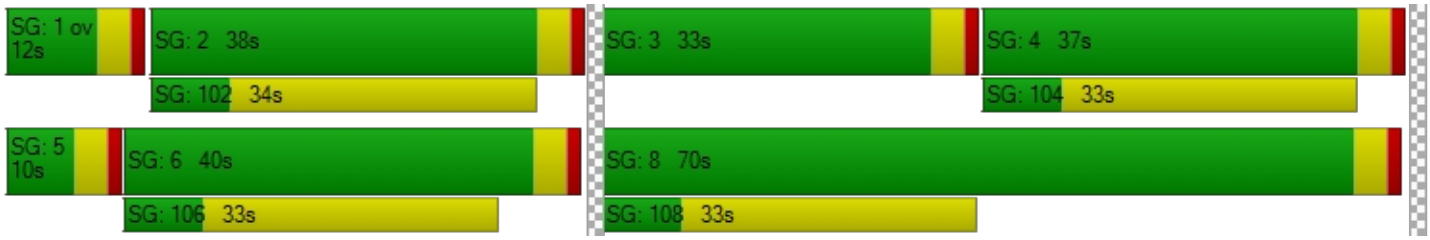
d_M, Delay for Movement [s/veh]	55.75	39.46	33.21	56.15	61.79	61.79	67.93	12.52	11.93	58.57	7.64	7.63
Movement LOS	E	D	C	E	E	E	E	B	B	E	A	A
d_A, Approach Delay [s/veh]	47.66			60.29			12.78			16.70		
Approach LOS	D			E			B			B		
d_I, Intersection Delay [s/veh]	22.27											
Intersection LOS	C											
Intersection V/C	0.548											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.51	49.51	49.51	49.51
l_p,int, Pedestrian LOS Score for Intersection	2.641	1.989	2.745	2.794
Crosswalk LOS	B	A	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1100	550	567	600
d_b, Bicycle Delay [s]	12.16	31.54	30.82	29.41
l_b,int, Bicycle LOS Score for Intersection	2.426	1.665	2.484	2.320
Bicycle LOS	B	A	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 7: Randolph Avenue at Madison Way

Control Type:	Signalized	Delay (sec / veh):	20.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.246

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Base Volume Input [veh/h]	21	273	111	69	259	20	34	11	58	80	4	57
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	21	273	111	69	259	20	34	11	58	80	4	57
Peak Hour Factor	0.9200	0.9200	0.9200	0.9030	0.9030	0.9030	0.6380	0.6380	0.6380	0.9310	0.9310	0.9310
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	74	30	19	72	6	13	4	23	21	1	15
Total Analysis Volume [veh/h]	23	297	121	76	287	22	53	17	91	86	4	61
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	6	6	0	6	6	0	0	6	0	0	6	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	26	0	10	26	0	0	54	0	0	54	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	15	0	0	12	0	0	19	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	66	66	5	68	68	7	7	7	7
g / C, Green / Cycle	0.03	0.73	0.73	0.06	0.76	0.76	0.08	0.08	0.08	0.08
(v / s)_i Volume / Saturation Flow Rate	0.01	0.11	0.11	0.04	0.08	0.08	0.03	0.06	0.05	0.03
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1900	1800	1900	1800	1900
c, Capacity [veh/h]	55	1383	1383	104	1435	1435	133	154	93	154
d1, Uniform Delay [s]	42.88	3.76	3.72	41.73	2.93	2.93	39.19	40.33	39.95	39.39
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.05	0.24	0.22	9.39	0.15	0.15	1.91	5.76	28.68	1.85
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.42	0.16	0.15	0.73	0.11	0.11	0.40	0.70	0.93	0.42
d, Delay for Lane Group [s/veh]	47.93	4.00	3.95	51.12	3.08	3.08	41.11	46.09	68.63	41.23
Lane Group LOS	D	A	A	D	A	A	D	D	E	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.57	1.04	0.96	1.91	0.60	0.59	1.17	2.55	2.55	1.43
50th-Percentile Queue Length [ft/ln]	14.37	26.09	24.06	47.83	15.11	14.85	29.23	63.71	63.87	35.81
95th-Percentile Queue Length [veh/ln]	1.03	1.88	1.73	3.44	1.09	1.07	2.10	4.59	4.60	2.58
95th-Percentile Queue Length [ft/ln]	25.87	46.96	43.32	86.10	27.20	26.73	52.61	114.68	114.96	64.45

Movement, Approach, & Intersection Results

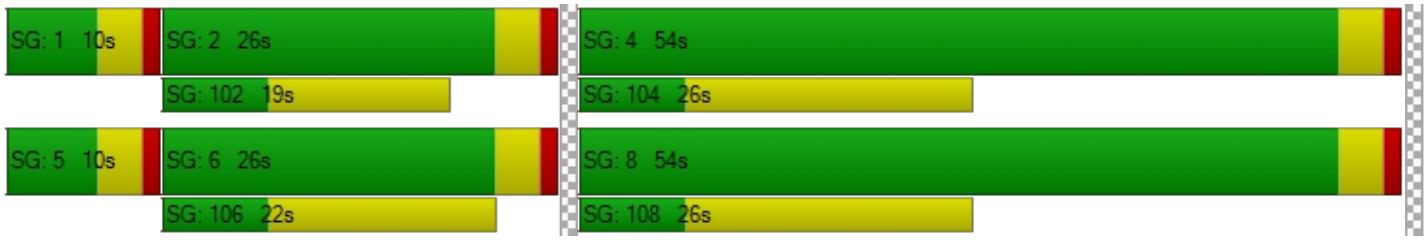
d_M, Delay for Movement [s/veh]	47.93	3.98	3.95	51.12	3.08	3.08	41.11	46.09	46.09	68.63	41.23	41.23
Movement LOS	D	A	A	D	A	A	D	D	D	E	D	D
d_A, Approach Delay [s/veh]	6.26			12.56			44.45			56.84		
Approach LOS	A			B			D			E		
d_I, Intersection Delay [s/veh]	20.51											
Intersection LOS	C											
Intersection V/C	0.246											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	34.68	34.68
l_p,int, Pedestrian LOS Score for Intersection	2.598	2.530	2.008	2.058
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	489	489	1111	1111
d_b, Bicycle Delay [s]	25.70	25.70	8.90	8.90
l_b,int, Bicycle LOS Score for Intersection	1.923	1.877	1.825	1.809
Bicycle LOS	A	A	A	A

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 8: Randolph Avenue at Brea Mall

Control Type:	Signalized	Delay (sec / veh):	22.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.469

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Base Volume Input [veh/h]	22	324	414	41	292	21	24	14	26	380	6	75
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	22	324	414	41	292	21	24	14	26	380	6	75
Peak Hour Factor	0.9560	0.9560	0.9560	0.8510	0.8510	0.8510	0.8970	0.8970	0.8970	0.8690	0.8690	0.8690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	85	108	12	86	6	7	4	7	109	2	22
Total Analysis Volume [veh/h]	23	339	433	48	343	25	27	16	29	437	7	86
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	6	6	0	6	6	0	0	6	0	0	6	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	29	0	10	29	0	0	30	0	0	31	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	17	0	0	18	0	0	19	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	R	L	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	65	57	57	65	58	58	5	5	18	18
g / C, Green / Cycle	0.65	0.57	0.57	0.65	0.58	0.58	0.05	0.05	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.01	0.18	0.23	0.03	0.10	0.10	0.02	0.02	0.15	0.14
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1900	1800	1900	1800	1900
c, Capacity [veh/h]	1190	1076	1076	1038	1106	1106	94	100	318	335
d1, Uniform Delay [s]	6.16	11.44	12.18	6.25	9.67	9.66	46.03	45.62	39.93	39.32
k, delay calibration	0.11	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.01	0.77	1.12	0.08	0.33	0.32	3.40	1.60	6.35	3.86
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.02	0.31	0.40	0.05	0.17	0.16	0.46	0.29	0.85	0.78
d, Delay for Lane Group [s/veh]	6.17	12.21	13.30	6.34	10.00	9.98	49.43	47.22	46.28	43.18
Lane Group LOS	A	B	B	A	B	A	D	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.16	4.00	5.46	0.36	1.89	1.86	1.12	0.73	6.91	6.39
50th-Percentile Queue Length [ft/ln]	4.01	100.03	136.55	8.98	47.23	46.39	28.06	18.37	172.86	159.68
95th-Percentile Queue Length [veh/ln]	0.29	7.20	9.29	0.65	3.40	3.34	2.02	1.32	11.23	10.53
95th-Percentile Queue Length [ft/ln]	7.22	180.06	232.37	16.17	85.02	83.51	50.51	33.07	280.68	263.30

Movement, Approach, & Intersection Results

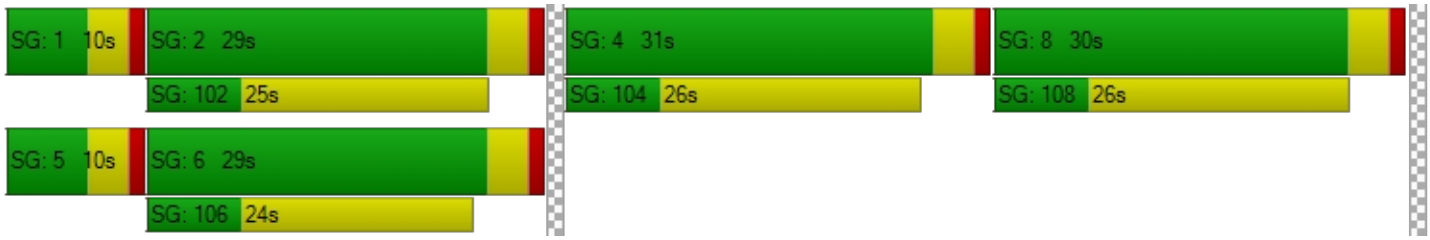
d_M, Delay for Movement [s/veh]	6.17	12.21	13.30	6.34	9.99	9.98	49.43	49.43	47.22	45.09	43.18	43.18
Movement LOS	A	B	B	A	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	12.63			9.57			48.54			44.76		
Approach LOS	B			A			D			D		
d_I, Intersection Delay [s/veh]	22.75											
Intersection LOS	C											
Intersection V/C	0.469											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	39.62	39.62	39.62	39.62
l_p,int, Pedestrian LOS Score for Intersection	2.617	2.474	2.006	2.319
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	500	500	520	540
d_b, Bicycle Delay [s]	28.14	28.14	27.40	26.66
l_b,int, Bicycle LOS Score for Intersection	2.215	1.903	1.678	2.434
Bicycle LOS	B	A	A	B

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 9: Brea Mall South at State College Boulevard

Control Type:	Signalized	Delay (sec / veh):	32.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.785

Intersection Setup

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Base Volume Input [veh/h]	168	24	90	60	19	509	651	350	29	86	583	35
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	168	24	90	60	19	509	651	350	29	86	583	35
Peak Hour Factor	0.8300	0.8300	0.8300	0.8970	0.8970	0.8970	0.9440	0.9440	0.9440	0.8860	0.8860	0.8860
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	51	7	27	17	5	142	172	93	8	24	165	10
Total Analysis Volume [veh/h]	202	29	108	67	21	567	690	371	31	97	658	40
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	4	5	2	0	1	6	0
Auxiliary Signal Groups						4,5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	6	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	30	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	37	0	0	12	12	39	31	0	40	32	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	26	0	0	0	0	0	20	0	0	21	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No	No	No	No		No	No	
Maximum Recall		No			No	No	No	No		No	No	
Pedestrian Recall		No			No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	C	C	R	L	C	C	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	12	12	8	8	59	31	76	76	8	53	53
g / C, Green / Cycle	0.10	0.10	0.10	0.07	0.07	0.49	0.26	0.63	0.63	0.07	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.05	0.08	0.06	0.04	0.01	0.30	0.20	0.11	0.10	0.05	0.19	0.18
s, saturation flow rate [veh/h]	1800	1800	1900	1800	1900	1900	3500	1900	1900	1800	1900	1900
c, Capacity [veh/h]	215	234	190	122	129	929	889	1195	1195	125	845	845
d1, Uniform Delay [s]	51.12	52.89	51.59	54.19	52.75	22.38	41.62	9.25	9.23	54.94	22.74	22.64
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.22	2.63	2.66	3.77	0.58	2.99	1.49	0.31	0.30	9.65	1.52	1.47
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.40	0.62	0.57	0.55	0.16	0.61	0.78	0.17	0.17	0.77	0.42	0.41
d, Delay for Lane Group [s/veh]	52.34	55.52	54.25	57.95	53.33	25.37	43.11	9.56	9.52	64.59	24.26	24.11
Lane Group LOS	D	E	D	E	D	C	D	A	A	E	C	C
Critical Lane Group	No	Yes	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.55	4.42	3.25	2.09	0.62	12.21	9.62	2.26	2.19	3.22	7.13	6.96
50th-Percentile Queue Length [ft/ln]	63.74	110.52	81.18	52.30	15.50	305.26	240.51	56.45	54.78	80.59	178.17	173.88
95th-Percentile Queue Length [veh/ln]	4.59	7.87	5.84	3.77	1.12	17.94	14.71	4.06	3.94	5.80	11.51	11.28
95th-Percentile Queue Length [ft/ln]	114.74	196.73	146.12	94.14	27.91	448.53	367.68	101.61	98.60	145.06	287.63	282.00

Movement, Approach, & Intersection Results

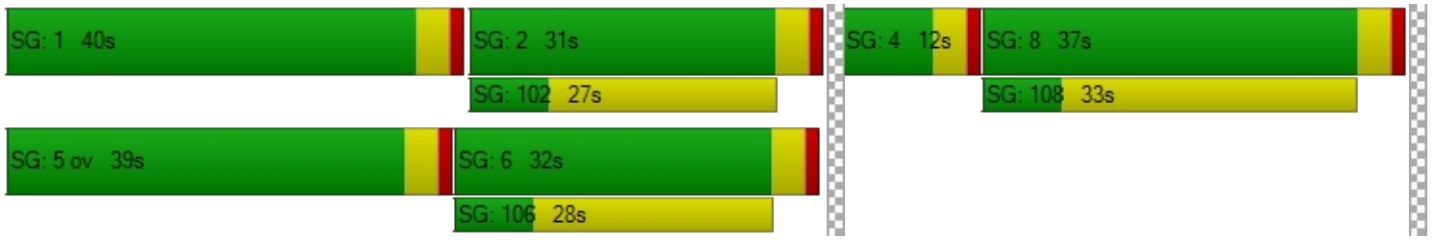
d_M, Delay for Movement [s/veh]	54.10	55.52	54.25	57.95	53.33	25.37	43.11	9.55	9.52	64.59	24.19	24.11
Movement LOS	D	E	D	E	D	C	D	A	A	E	C	C
d_A, Approach Delay [s/veh]	54.30			29.60			30.75			29.11		
Approach LOS	D			C			C			C		
d_I, Intersection Delay [s/veh]	32.81											
Intersection LOS	C											
Intersection V/C	0.785											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.54	49.54	0.00	49.54
l_p,int, Pedestrian LOS Score for Intersection	2.409	2.589	0.000	2.575
Crosswalk LOS	B	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	550	133	450	466
d_b, Bicycle Delay [s]	31.57	52.30	36.07	35.30
l_b,int, Bicycle LOS Score for Intersection	2.119	2.100	2.461	2.215
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 10: Harbor Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	38.7
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.705

Intersection Setup

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	343	746	198	210	775	270	315	1105	272	345	1206	175
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	343	746	198	210	775	270	315	1105	272	345	1206	175
Peak Hour Factor	0.9070	0.9070	0.9070	0.9640	0.9640	0.9640	0.9710	0.9710	0.9710	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	95	206	55	54	201	70	81	285	70	90	314	46
Total Analysis Volume [veh/h]	378	822	218	218	804	280	324	1138	280	359	1256	182
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	20	46	0	13	39	0	20	42	0	19	41	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	31	0	0	28	0	0	31	0	0	29	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	28	28	9	22	22	13	53	53	14	54	54
g / C, Green / Cycle	0.12	0.23	0.23	0.08	0.18	0.18	0.11	0.44	0.44	0.12	0.45	0.45
(v / s)_i Volume / Saturation Flow Rate	0.11	0.14	0.11	0.06	0.14	0.15	0.09	0.25	0.24	0.10	0.22	0.10
s, saturation flow rate [veh/h]	3500	5700	1900	3500	5700	1900	3500	3800	1900	3500	5700	1900
c, Capacity [veh/h]	438	1331	444	267	1053	351	388	1664	832	418	2543	848
d1, Uniform Delay [s]	51.55	41.24	39.87	54.65	46.48	46.83	52.32	25.41	25.00	51.91	23.63	20.38
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.20	0.47	0.84	6.04	1.18	4.18	4.74	1.47	2.61	5.27	0.69	0.58
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.86	0.62	0.49	0.82	0.76	0.80	0.83	0.58	0.55	0.86	0.49	0.21
d, Delay for Lane Group [s/veh]	56.75	41.71	40.71	60.69	47.66	51.01	57.06	26.88	27.61	57.18	24.32	20.96
Lane Group LOS	E	D	D	E	D	D	E	C	C	E	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.89	7.32	5.69	3.47	7.70	8.39	5.04	10.52	10.13	5.61	8.51	3.27
50th-Percentile Queue Length [ft/ln]	147.27	182.99	142.23	86.80	192.52	209.80	125.93	263.02	253.32	140.16	212.86	81.68
95th-Percentile Queue Length [veh/ln]	9.87	11.76	9.60	6.25	12.25	13.14	8.72	15.84	15.35	9.49	13.30	5.88
95th-Percentile Queue Length [ft/ln]	246.78	293.92	240.02	156.24	306.30	328.57	217.95	396.01	383.83	237.24	332.49	147.02

Movement, Approach, & Intersection Results

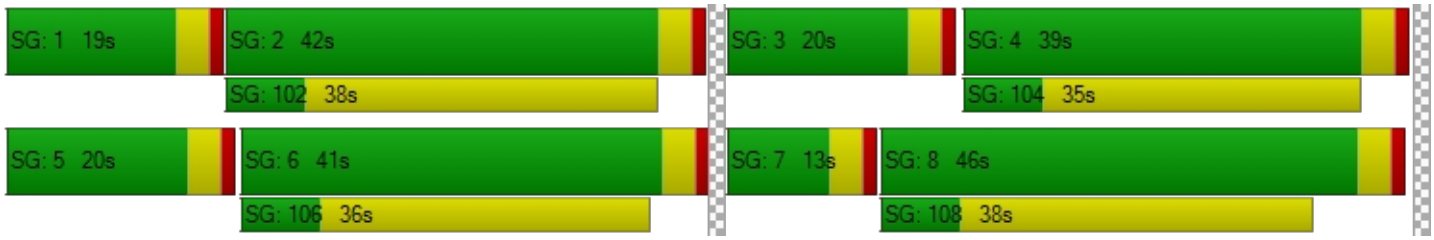
d_M, Delay for Movement [s/veh]	56.75	41.71	40.71	60.69	47.66	51.01	57.06	26.99	27.61	57.18	24.32	20.96
Movement LOS	E	D	D	E	D	D	E	C	C	E	C	C
d_A, Approach Delay [s/veh]	45.57			50.56			32.68			30.54		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	38.71											
Intersection LOS	D											
Intersection V/C	0.705											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.54	49.54	49.54	49.54
l_p,int, Pedestrian LOS Score for Intersection	3.173	3.148	3.185	3.228
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	700	583	633	616
d_b, Bicycle Delay [s]	25.38	30.13	28.04	28.73
l_b,int, Bicycle LOS Score for Intersection	2.340	2.276	2.518	2.548
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 11: Puente Street at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	13.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.436

Intersection Setup

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	26	30	93	121	42	114	69	1269	36	77	1308	148
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	30	93	121	42	114	69	1269	36	77	1308	148
Peak Hour Factor	0.8200	0.8200	0.8200	0.7710	0.7710	0.7710	0.9890	0.9890	0.9890	0.9120	0.9120	0.9120
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	9	28	39	14	37	17	321	9	21	359	41
Total Analysis Volume [veh/h]	32	37	113	157	54	148	70	1283	36	84	1434	162
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	38	0	0	38	0	10	28	0	24	42	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	23	0	0	17	0	0	23	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	10	10	10	10	10	10	5	62	62	6	63	63
g / C, Green / Cycle	0.11	0.11	0.11	0.11	0.11	0.11	0.06	0.69	0.69	0.06	0.70	0.70
(v / s)_i Volume / Saturation Flow Rate	0.02	0.02	0.06	0.09	0.01	0.08	0.04	0.23	0.24	0.05	0.25	0.09
s, saturation flow rate [veh/h]	1800	1900	1900	1800	3800	1900	1800	3800	1900	1800	5700	1900
c, Capacity [veh/h]	229	219	219	221	438	219	101	2621	1310	111	3963	1321
d1, Uniform Delay [s]	35.89	35.95	37.48	38.62	35.76	38.23	41.73	5.62	5.68	41.56	5.58	4.57
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.28	0.36	1.88	4.21	0.13	3.62	8.15	0.34	0.72	9.84	0.26	0.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.14	0.17	0.52	0.71	0.12	0.68	0.69	0.33	0.34	0.75	0.36	0.12
d, Delay for Lane Group [s/veh]	36.16	36.31	39.36	42.83	35.88	41.85	49.88	5.96	6.40	51.40	5.84	4.76
Lane Group LOS	D	D	D	D	D	D	D	A	A	D	A	A
Critical Lane Group	No	No	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.64	0.75	2.43	3.57	0.53	3.31	1.74	2.86	3.13	2.12	3.10	0.90
50th-Percentile Queue Length [ft/ln]	16.12	18.71	60.68	89.23	13.37	82.75	43.47	71.50	78.14	52.96	77.62	22.62
95th-Percentile Queue Length [veh/ln]	1.16	1.35	4.37	6.42	0.96	5.96	3.13	5.15	5.63	3.81	5.59	1.63
95th-Percentile Queue Length [ft/ln]	29.01	33.68	109.22	160.61	24.07	148.94	78.25	128.70	140.65	95.33	139.72	40.71

Movement, Approach, & Intersection Results

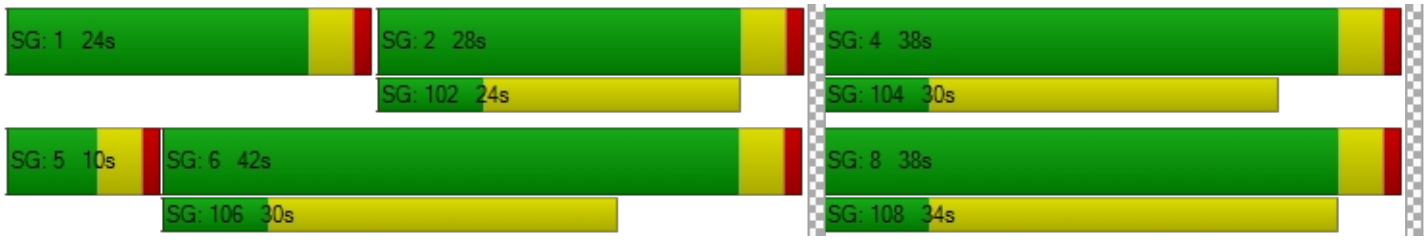
d_M, Delay for Movement [s/veh]	36.16	36.31	39.36	42.83	35.88	41.85	49.88	6.10	6.40	51.40	5.84	4.76
Movement LOS	D	D	D	D	D	D	D	A	A	D	A	A
d_A, Approach Delay [s/veh]	38.18			41.38			8.32			8.01		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	12.97											
Intersection LOS	B											
Intersection V/C	0.436											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	34.68	34.68
l_p,int, Pedestrian LOS Score for Intersection	2.369	2.422	3.057	3.342
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	755	755	533	844
d_b, Bicycle Delay [s]	17.43	17.43	24.21	15.03
l_b,int, Bicycle LOS Score for Intersection	1.860	1.856	2.324	2.484
Bicycle LOS	A	A	B	B

Sequence

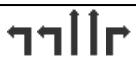
Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: Brea Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	40.3
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.845

Intersection Setup

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	399	471	260	259	826	173	176	1379	255	333	1305	145
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	399	471	260	259	826	173	176	1379	255	333	1305	145
Peak Hour Factor	0.9240	0.9240	0.9240	0.9170	0.9170	0.9170	0.9130	0.9130	0.9130	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	108	127	70	71	225	47	48	378	70	94	367	41
Total Analysis Volume [veh/h]	432	510	281	282	901	189	193	1510	279	374	1466	163
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	21	41	0	19	39	0	12	41	0	19	48	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	30	0	0	28	0	0	30	0	0	30	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	17	36	36	12	31	31	8	41	41	15	48	48
g / C, Green / Cycle	0.14	0.30	0.30	0.10	0.26	0.26	0.07	0.34	0.34	0.12	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.12	0.09	0.15	0.08	0.24	0.10	0.06	0.26	0.15	0.11	0.26	0.09
s, saturation flow rate [veh/h]	3500	5700	1900	3500	3800	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	488	1719	573	347	992	496	238	1956	652	431	2270	757
d1, Uniform Delay [s]	50.75	32.18	34.39	53.03	42.98	36.41	55.21	35.25	30.37	51.72	29.28	23.79
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.56	0.10	0.65	4.64	3.56	0.48	6.50	3.03	2.05	5.46	1.43	0.65
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.89	0.30	0.49	0.81	0.91	0.38	0.81	0.77	0.43	0.87	0.65	0.22
d, Delay for Lane Group [s/veh]	56.31	32.28	35.04	57.66	46.53	36.89	61.71	38.28	32.42	57.17	30.72	24.45
Lane Group LOS	E	C	D	E	D	D	E	D	C	E	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	6.74	3.82	6.83	4.39	13.33	4.63	3.10	13.56	6.59	5.85	11.59	3.20
50th-Percentile Queue Length [ft/ln]	168.54	95.56	170.71	109.79	333.23	115.74	77.42	339.10	164.69	146.23	289.86	79.94
95th-Percentile Queue Length [veh/ln]	11.00	6.88	11.11	7.83	19.32	8.16	5.57	19.60	10.80	9.82	17.18	5.76
95th-Percentile Queue Length [ft/ln]	275.00	172.02	277.85	195.71	482.92	203.96	139.36	490.11	269.92	245.39	429.47	143.90

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	56.31	32.28	35.04	57.66	46.53	36.89	61.71	38.28	32.42	57.17	30.72	24.45
Movement LOS	E	C	D	E	D	D	E	D	C	E	C	C
d_A, Approach Delay [s/veh]	41.40			47.49			39.73			35.15		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	40.26											
Intersection LOS	D											
Intersection V/C	0.845											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.54	49.54	49.54	49.54
l_p,int, Pedestrian LOS Score for Intersection	3.078	3.012	3.304	3.305
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	616	583	616	733
d_b, Bicycle Delay [s]	28.73	30.13	28.73	24.09
l_b,int, Bicycle LOS Score for Intersection	2.232	2.692	2.650	2.661
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 13: Randolph Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	36.2
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.810

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	67	38	172	398	76	285	307	1422	32	109	1561	450
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	67	38	172	398	76	285	307	1422	32	109	1561	450
Peak Hour Factor	0.8250	0.8250	0.8250	0.9010	0.9010	0.9010	0.9400	0.9400	0.9400	0.9820	0.9820	0.9820
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	12	52	110	21	79	82	378	9	28	397	115
Total Analysis Volume [veh/h]	81	46	208	442	84	316	327	1513	34	111	1590	458
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	10	0	0	44	0	16	44	0	12	40	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	29	0	0	28	0	0	29	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	14	14	27	27	12	45	45	8	41	41
g / C, Green / Cycle	0.13	0.13	0.13	0.24	0.24	0.11	0.41	0.41	0.07	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.05	0.03	0.11	0.13	0.21	0.09	0.27	0.28	0.06	0.28	0.24
s, saturation flow rate [veh/h]	1800	1800	1900	3500	1900	3500	3800	1900	1800	5700	1900
c, Capacity [veh/h]	234	234	246	848	460	384	1556	778	132	2127	709
d1, Uniform Delay [s]	43.66	42.79	46.82	36.19	40.05	48.14	26.23	26.62	50.37	30.00	28.50
k, delay calibration	0.11	0.11	0.11	0.11	0.15	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.88	0.41	7.68	0.50	6.93	5.41	2.16	4.77	13.05	2.45	4.50
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.35	0.20	0.84	0.52	0.87	0.85	0.65	0.68	0.84	0.75	0.65
d, Delay for Lane Group [s/veh]	44.54	43.19	54.50	36.69	46.98	53.55	28.39	31.38	63.42	32.45	33.00
Lane Group LOS	D	D	D	D	D	D	C	C	E	C	C
Critical Lane Group	No	No	Yes	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.07	1.15	6.07	5.19	11.17	4.68	11.00	12.14	3.49	12.43	10.70
50th-Percentile Queue Length [ft/ln]	51.74	28.66	151.70	129.78	279.17	116.96	274.93	303.44	87.25	310.81	267.44
95th-Percentile Queue Length [veh/ln]	3.73	2.06	10.11	8.93	16.65	8.23	16.44	17.85	6.28	18.21	16.06
95th-Percentile Queue Length [ft/ln]	93.13	51.59	252.69	223.20	416.18	205.64	410.89	446.28	157.05	455.37	401.54

Movement, Approach, & Intersection Results

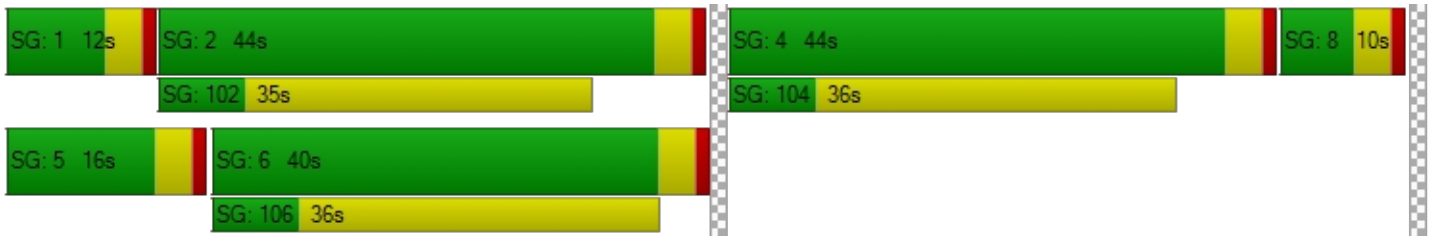
d_M, Delay for Movement [s/veh]	44.54	43.19	54.50	36.69	46.98	46.98	53.55	29.37	31.38	63.42	32.45	33.00
Movement LOS	D	D	D	D	D	D	D	C	C	E	C	C
d_A, Approach Delay [s/veh]	50.54			41.58			33.63			34.16		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	36.22											
Intersection LOS	D											
Intersection V/C	0.810											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	44.58	44.58	44.58	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.278	2.636	3.206	0.000
Crosswalk LOS	B	B	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	109	727	727	654
d_b, Bicycle Delay [s]	49.19	22.29	22.29	24.91
l_b,int, Bicycle LOS Score for Intersection	1.836	2.949	2.590	2.747
Bicycle LOS	A	C	B	B

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 14: State College Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	111.9
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.241

Intersection Setup

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	265	499	562	561	376	177	132	1491	176	633	1763	922
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	265	499	562	561	376	177	132	1491	176	633	1763	922
Peak Hour Factor	0.9800	0.9800	0.9800	0.8330	0.8330	0.8330	0.9250	0.9250	0.9250	0.9230	0.9230	0.9230
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	68	127	143	168	113	53	36	403	48	171	478	250
Total Analysis Volume [veh/h]	270	509	573	673	451	212	143	1612	190	686	1910	999
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	29	41	0	27	39	0	10	34	0	18	42	42
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	30	0	0	28	0	0	23	0	0	23	23
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	12	37	37	23	48	48	6	30	30	14	38	65
g / C, Green / Cycle	0.10	0.31	0.31	0.19	0.40	0.40	0.05	0.25	0.25	0.12	0.32	0.54
(v / s)_i Volume / Saturation Flow Rate	0.08	0.13	0.30	0.34	0.18	0.17	0.04	0.24	0.24	0.20	0.34	0.53
s, saturation flow rate [veh/h]	3500	3800	1900	2000	1900	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	342	1166	583	383	762	762	176	1432	477	409	1811	1031
d1, Uniform Delay [s]	52.96	33.30	41.29	48.51	26.36	25.82	56.43	44.01	44.38	53.00	40.94	26.45
k, delay calibration	0.11	0.11	0.44	0.21	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.11	0.26	31.19	344.32	0.43	0.36	8.60	12.92	32.80	306.85	37.21	21.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.44	0.98	1.76	0.46	0.41	0.81	0.94	0.96	1.68	1.05	0.97
d, Delay for Lane Group [s/veh]	57.07	33.55	72.48	392.83	26.79	26.18	65.02	56.94	77.18	359.85	78.15	47.86
Lane Group LOS	E	C	E	F	C	C	E	E	E	F	F	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.17	5.98	21.63	24.05	7.35	6.53	2.36	14.65	17.74	23.59	23.83	32.20
50th-Percentile Queue Length [ft/ln]	104.36	149.46	540.63	601.15	183.72	163.20	58.90	366.25	443.41	589.73	595.74	805.07
95th-Percentile Queue Length [veh/ln]	7.51	9.99	29.25	39.43	11.79	10.72	4.24	20.93	24.64	37.37	32.97	41.51
95th-Percentile Queue Length [ft/ln]	187.85	249.70	731.29	985.67	294.86	267.96	106.02	523.17	616.08	934.34	824.35	1037.73

Movement, Approach, & Intersection Results

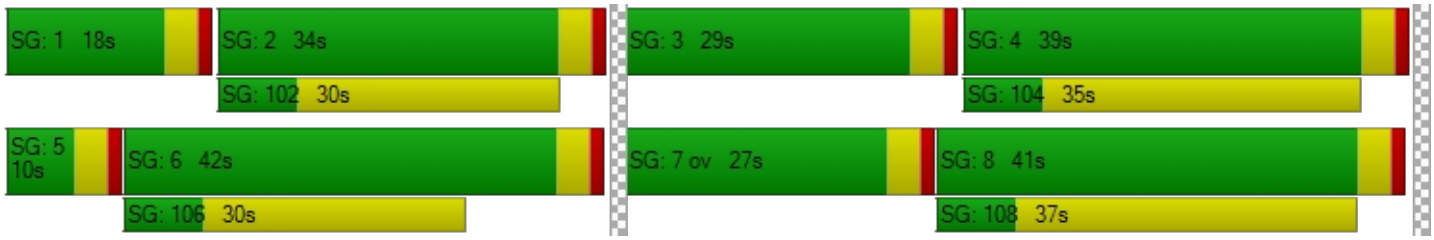
d_M, Delay for Movement [s/veh]	57.07	33.55	72.48	392.83	26.65	26.18	65.02	60.32	77.18	359.85	78.15	47.86
Movement LOS	E	C	E	F	C	C	E	E	E	F	F	D
d_A, Approach Delay [s/veh]	54.75			211.04			62.31			123.49		
Approach LOS	D			F			E			F		
d_I, Intersection Delay [s/veh]	111.95											
Intersection LOS	F											
Intersection V/C	1.241											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.51	49.51	49.51	49.51
I_p,int, Pedestrian LOS Score for Intersection	2.981	2.952	3.333	3.609
Crosswalk LOS	C	C	C	D
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	617	583	500	633
d_b, Bicycle Delay [s]	28.71	30.11	33.76	28.02
I_b,int, Bicycle LOS Score for Intersection	2.675	2.662	2.362	3.537
Bicycle LOS	B	B	B	D

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 15: SR-57 SB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	17.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.771

Intersection Setup

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	0	0	0	536	0	726	0	1895	1011	0	2455	353
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	536	0	726	0	1895	1011	0	2455	353
Peak Hour Factor	1.0000	1.0000	1.0000	0.9240	1.0000	0.9240	1.0000	0.9460	0.9460	1.0000	0.9730	0.9730
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	145	0	196	0	501	267	0	631	91
Total Analysis Volume [veh/h]	0	0	0	580	0	786	0	2003	1069	0	2523	363
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	7	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	6	0	0	0	6	0	0	6	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	64	0	0	0	26	0	0	26	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	15	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	C
C, Cycle Length [s]		90	90	90	90	90
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		28	28	28	54	54
g / C, Green / Cycle		0.31	0.31	0.31	0.60	0.60
(v / s)_i Volume / Saturation Flow Rate		0.26	0.26	0.24	0.35	0.44
s, saturation flow rate [veh/h]		1750	1750	1900	5700	5700
c, Capacity [veh/h]		544	544	591	3420	3420
d1, Uniform Delay [s]		28.82	28.82	28.04	11.08	12.90
k, delay calibration		0.11	0.11	0.11	0.50	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		3.50	3.50	2.17	0.74	1.46
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.84	0.84	0.77	0.59	0.74
d, Delay for Lane Group [s/veh]		32.32	32.32	30.21	11.82	14.36
Lane Group LOS		C	C	C	B	B
Critical Lane Group		Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]		9.34	9.34	8.92	7.56	11.21
50th-Percentile Queue Length [ft/ln]		233.39	233.39	223.12	189.10	280.16
95th-Percentile Queue Length [veh/ln]		14.35	14.35	13.82	12.07	16.70
95th-Percentile Queue Length [ft/ln]		358.67	358.67	345.61	301.86	417.41

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	32.32	0.00	31.10	0.00	11.82	0.00	0.00	14.36	0.00
Movement LOS				C		C		B			B	
d_A, Approach Delay [s/veh]	0.00			31.62			11.82			14.36		
Approach LOS	A			C			B			B		
d_I, Intersection Delay [s/veh]	17.50											
Intersection LOS	B											
Intersection V/C	0.771											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	34.63	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	2.463	0.000	0.000
Crosswalk LOS	F	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1335	489	489
d_b, Bicycle Delay [s]	44.96	4.98	25.65	25.65
l_b,int, Bicycle LOS Score for Intersection	4.132	3.814	2.661	2.947
Bicycle LOS	D	D	B	C

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 16: SR-57 NB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	36.5
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.871

Intersection Setup

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	1261	117	552	0	0	371	388	1727	554	0	1771	60
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1261	117	552	0	0	371	388	1727	554	0	1771	60
Peak Hour Factor	0.9320	0.9320	0.9320	1.0000	1.0000	0.8040	0.9340	0.9340	0.9340	1.0000	0.9510	0.9510
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	338	31	148	0	0	115	104	462	148	0	466	16
Total Analysis Volume [veh/h]	1353	126	592	0	0	461	415	1849	593	0	1862	63
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Overlap	Protecte	Permiss	Unsigna	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	0	5	5	2	0	0	6	0
Auxiliary Signal Groups						5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	6	0	0	0	6	6	6	0	0	6	0
Maximum Green [s]	0	30	0	0	0	30	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	1.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	47	0	0	0	43	43	73	0	0	30	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	22	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No				No		No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No				No	No	No			No	
Maximum Recall		No				No	No	No			No	
Pedestrian Recall		No				No	No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	R	L	C	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	40	40	40	31	31	72	37	37
g / C, Green / Cycle	0.33	0.33	0.33	0.26	0.26	0.60	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.29	0.30	0.28	0.12	0.23	0.32	0.25	0.25
s, saturation flow rate [veh/h]	3500	1750	1900	3800	1800	5700	5700	1900
c, Capacity [veh/h]	1171	586	636	971	460	3413	1766	589
d1, Uniform Delay [s]	37.47	37.94	36.70	37.82	43.19	14.29	38.26	38.26
k, delay calibration	0.11	0.34	0.29	0.11	0.24	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.17	14.12	7.25	0.36	13.50	0.62	4.34	11.97
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.87	0.90	0.83	0.47	0.90	0.54	0.82	0.82
d, Delay for Lane Group [s/veh]	39.64	52.06	43.94	38.18	56.69	14.92	42.60	50.23
Lane Group LOS	D	D	D	D	E	B	D	D
Critical Lane Group	No	Yes	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	14.24	16.77	15.28	5.80	13.55	9.77	13.68	14.93
50th-Percentile Queue Length [ft/ln]	355.92	419.34	382.07	144.95	338.65	244.24	342.06	373.24
95th-Percentile Queue Length [veh/ln]	20.42	23.49	21.69	9.75	19.58	14.90	19.75	21.27
95th-Percentile Queue Length [ft/ln]	510.62	587.26	542.35	243.67	489.55	372.39	493.72	531.66

Movement, Approach, & Intersection Results

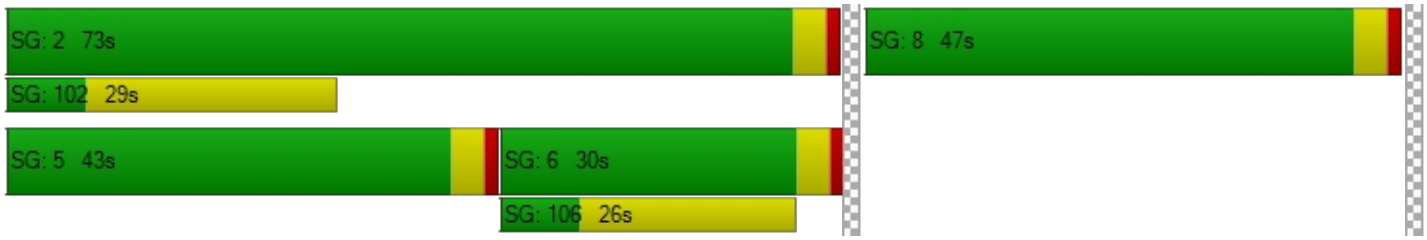
d_M, Delay for Movement [s/veh]	42.62	52.06	44.96	0.00	0.00	38.18	56.69	14.92	0.00	0.00	44.32	50.23
Movement LOS	D	D	D			D	E	B			D	D
d_A, Approach Delay [s/veh]	43.88			38.18			22.57			44.51		
Approach LOS	D			D			C			D		
d_I, Intersection Delay [s/veh]	36.49											
Intersection LOS	D											
Intersection V/C	0.871											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.49	49.49	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.717	2.300	0.000	0.000
Crosswalk LOS	B	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	717	650	1150	433
d_b, Bicycle Delay [s]	24.69	27.32	10.83	36.80
l_b,int, Bicycle LOS Score for Intersection	4.977	1.560	2.805	2.354
Bicycle LOS	E	A	C	B

Sequence

Ring 1	-	2	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 17: Associated Road at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	34.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.767

Intersection Setup

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	238	181	109	324	233	180	211	1652	239	144	1449	205
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	238	181	109	324	233	180	211	1652	239	144	1449	205
Peak Hour Factor	0.9140	0.9140	0.9140	0.8970	0.8970	0.8970	0.9020	0.9020	0.9020	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	65	50	30	90	65	50	58	458	66	38	382	54
Total Analysis Volume [veh/h]	260	198	119	361	260	201	234	1831	265	152	1527	216
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	39	0	17	42	0	23	49	0	15	41	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	28	0	0	29	0	0	26	0	0	25	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	10	16	16	13	19	19	17	64	64	11	57	57
g / C, Green / Cycle	0.08	0.13	0.13	0.11	0.16	0.16	0.15	0.53	0.53	0.09	0.48	0.48
(v / s)_i Volume / Saturation Flow Rate	0.07	0.09	0.08	0.10	0.14	0.11	0.13	0.37	0.37	0.08	0.23	0.23
s, saturation flow rate [veh/h]	3500	1900	1900	3500	1900	1900	1800	3800	1900	1800	5700	1900
c, Capacity [veh/h]	294	256	256	381	303	303	262	2018	1009	166	2724	908
d1, Uniform Delay [s]	54.42	49.31	48.82	53.16	49.15	47.44	50.38	20.84	20.93	54.03	21.21	21.30
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.72	2.83	2.13	12.19	7.02	2.49	10.23	1.96	3.96	17.41	0.60	1.85
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.88	0.65	0.59	0.95	0.86	0.66	0.89	0.69	0.70	0.92	0.48	0.48
d, Delay for Lane Group [s/veh]	63.14	52.14	50.95	65.35	56.17	49.93	60.61	22.80	24.89	71.44	21.82	23.15
Lane Group LOS	E	D	D	E	E	D	E	C	C	E	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.24	4.97	4.37	6.05	8.17	5.86	7.63	14.56	15.28	5.35	8.32	8.78
50th-Percentile Queue Length [ft/ln]	106.03	124.15	109.36	151.16	204.16	146.57	190.83	363.91	381.91	133.76	207.93	219.41
95th-Percentile Queue Length [veh/ln]	7.62	8.62	7.80	10.08	12.85	9.83	12.16	20.81	21.69	9.14	13.05	13.63
95th-Percentile Queue Length [ft/ln]	190.47	215.52	195.11	251.98	321.32	245.84	304.10	520.34	542.16	228.60	326.18	340.87

Movement, Approach, & Intersection Results

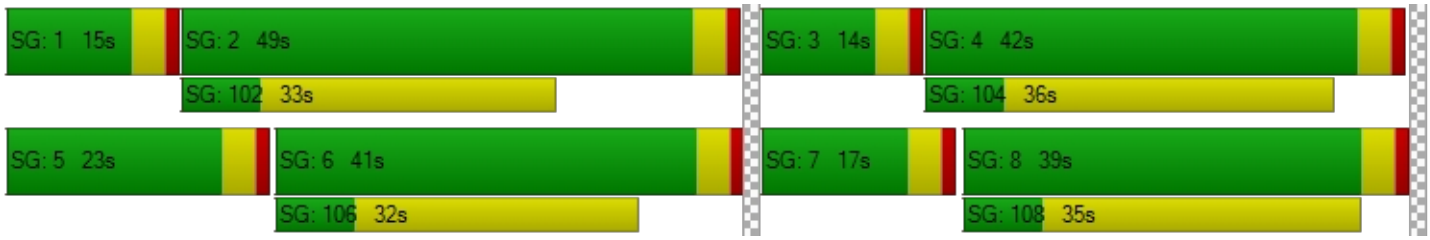
d_M, Delay for Movement [s/veh]	63.14	51.96	50.95	65.35	56.17	49.93	60.61	23.30	24.89	71.44	22.01	23.15
Movement LOS	E	D	D	E	E	D	E	C	C	E	C	C
d_A, Approach Delay [s/veh]	56.79			58.68			27.23			26.11		
Approach LOS	E			E			C			C		
d_I, Intersection Delay [s/veh]	34.48											
Intersection LOS	C											
Intersection V/C	0.767											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.52	49.52	49.52	49.52
l_p,int, Pedestrian LOS Score for Intersection	2.558	2.706	3.265	3.252
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	583	633	750	617
d_b, Bicycle Delay [s]	30.12	28.03	23.45	28.72
l_b,int, Bicycle LOS Score for Intersection	2.036	2.916	2.841	2.341
Bicycle LOS	B	C	C	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 18: Castlegate Lane/Placentia Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	20.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.750

Intersection Setup

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	154	17	231	25	11	12	24	1817	272	200	1727	45
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	154	17	231	25	11	12	24	1817	272	200	1727	45
Peak Hour Factor	0.9770	0.9770	0.9770	0.8650	0.8650	0.8650	0.9010	0.9010	0.9010	0.9030	0.9030	0.9030
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	4	59	7	3	3	7	504	75	55	478	12
Total Analysis Volume [veh/h]	158	17	236	29	13	14	27	2017	302	221	1913	50
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	26	0	0	10	0	10	32	0	22	44	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	15	0	0	0	0	0	21	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	14	14	5	5	3	43	43	13	53	53
g / C, Green / Cycle	0.15	0.15	0.15	0.05	0.05	0.03	0.47	0.47	0.14	0.59	0.59
(v / s)_i Volume / Saturation Flow Rate	0.05	0.05	0.12	0.02	0.01	0.02	0.35	0.16	0.12	0.34	0.35
s, saturation flow rate [veh/h]	1750	1750	1900	1800	1900	1800	5700	1900	1800	3800	1900
c, Capacity [veh/h]	267	267	289	93	98	61	2699	900	261	2221	1111
d1, Uniform Delay [s]	34.10	34.11	36.99	41.23	41.15	42.70	19.35	14.86	37.55	11.79	12.04
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.71	0.72	5.56	1.90	1.51	4.87	1.94	1.01	7.34	1.12	2.45
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.33	0.33	0.82	0.31	0.28	0.44	0.75	0.34	0.85	0.58	0.60
d, Delay for Lane Group [s/veh]	34.80	34.83	42.56	43.12	42.65	47.57	21.29	15.87	44.90	12.91	14.48
Lane Group LOS	C	C	D	D	D	D	C	B	D	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.73	1.75	5.39	0.66	0.61	0.67	11.16	3.94	5.20	7.66	8.52
50th-Percentile Queue Length [ft/ln]	43.33	43.75	134.70	16.60	15.31	16.68	279.03	98.40	129.98	191.46	213.04
95th-Percentile Queue Length [veh/ln]	3.12	3.15	9.19	1.19	1.10	1.20	16.64	7.08	8.94	12.20	13.31
95th-Percentile Queue Length [ft/ln]	77.99	78.74	229.87	29.87	27.56	30.02	416.00	177.12	223.47	304.92	332.73

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.81	34.83	42.56	43.12	42.65	42.65	47.57	21.29	15.87	44.90	13.42	14.48
Movement LOS	C	C	D	D	D	D	D	C	B	D	B	B
d_A, Approach Delay [s/veh]	39.26			42.89			20.89			16.63		
Approach LOS	D			D			C			B		
d_I, Intersection Delay [s/veh]	20.79											
Intersection LOS	C											
Intersection V/C	0.750											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.72	34.72	0.00	34.72
l_p,int, Pedestrian LOS Score for Intersection	2.361	1.989	0.000	3.216
Crosswalk LOS	B	A	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	488	133	622	888
d_b, Bicycle Delay [s]	25.73	39.24	21.40	13.92
l_b,int, Bicycle LOS Score for Intersection	2.238	1.652	2.850	2.761
Bicycle LOS	B	A	C	C

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

APPENDIX D-II

YEAR 2026 TRAFFIC CONDITIONS

Brea Mall Expansion, Brea

Vistro File: N:\...\4099 HCM Network.vistro
Report File: N:\...\AM 2026.pdf

Scenario 4 AM 2026
4/12/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State College Boulevard at Lambert Road	Signalized	HCM 6th Edition	NB Thru	0.841	37.5	D
2	SR-57 SB Ramps at Lambert Road	Signalized	HCM 6th Edition	WB Left	0.887	29.0	C
3	SR-57 NB Ramps at Lambert Road	Signalized	HCM 6th Edition	NB Left	0.901	27.0	C
4	Randolph Avenue at Birch Street	Signalized	HCM 6th Edition	WB Left	0.397	14.1	B
5	State College Boulevard at Birch Street	Signalized	HCM 6th Edition	EB Left	0.691	40.6	D
6	S Associated Road at Birch Street	Signalized	HCM 6th Edition	EB Left	0.813	28.3	C
7	Randolph Avenue at Madison Way	Signalized	HCM 6th Edition	SB Left	0.150	17.0	B
8	Randolph Avenue at Brea Mall	Signalized	HCM 6th Edition	EB Left	0.115	8.0	A
9	Brea Mall South at State College Boulevard	Signalized	HCM 6th Edition	WB Left	0.232	15.4	B
10	Harbor Boulevard at Imperial Highway	Signalized	HCM 6th Edition	NB Left	0.926	45.1	D
11	Puente Street at Imperial Highway	Signalized	HCM 6th Edition	SB Left	0.589	20.2	C
12	Brea Boulevard at Imperial Highway	Signalized	HCM 6th Edition	WB Left	0.968	46.8	D
13	Randolph Avenue at Imperial Highway	Signalized	HCM 6th Edition	WB Left	0.574	14.4	B
14	State College Boulevard at Imperial Highway	Signalized	HCM 6th Edition	SB Left	0.851	34.8	C
15	SR-57 SB Ramps at Imperial Highway	Signalized	HCM 6th Edition	SB Left	0.669	16.1	B
16	SR-57 NB Ramps at Imperial Highway	Signalized	HCM 6th Edition	EB Left	0.687	22.4	C
17	Associated Road at Imperial Highway	Signalized	HCM 6th Edition	WB Left	0.805	32.5	C
18	Castlegate Lane/Placentia	Signalized	HCM 6th	EB Left	0.719	19.1	B

16	Avenue at Imperial Highway	Signalized	Edition	EB Left	0.719	19.1	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: State College Boulevard at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	37.5
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.841

Intersection Setup

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	173	222	206	926	617	8	15	1400	212	479	1794	576
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	173	222	206	926	617	8	15	1400	212	479	1794	576
Peak Hour Factor	0.9130	0.9130	0.9130	0.9700	0.9700	0.9700	0.9540	0.9540	0.9540	0.9540	0.9540	0.9540
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	47	61	56	239	159	2	4	367	56	126	470	151
Total Analysis Volume [veh/h]	189	243	226	955	636	8	16	1468	222	502	1881	604
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	12	13	0	43	44	0	10	40	0	24	54	54
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	0	0	0	33	0	0	28	0	0	22	22
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	8	12	12	12	36	40	40	3	37	37	19	54	94
g / C, Green / Cycle	0.07	0.10	0.10	0.10	0.30	0.33	0.33	0.02	0.31	0.31	0.16	0.45	0.78
(v / s)_i Volume / Saturation Flow Rate	0.05	0.09	0.08	0.08	0.27	0.17	0.17	0.00	0.22	0.22	0.14	0.33	0.32
s, saturation flow rate [veh/h]	3500	1900	1900	1900	3500	1900	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	236	186	186	186	1058	632	632	76	1750	583	559	2537	1483
d1, Uniform Delay [s]	55.20	53.61	53.21	52.90	40.20	32.20	32.18	57.73	37.04	37.14	49.49	27.59	4.24
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.24	14.81	9.48	6.99	3.19	0.64	0.64	1.37	2.62	7.82	5.49	2.00	0.83
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.80	0.91	0.84	0.78	0.90	0.51	0.51	0.21	0.72	0.73	0.90	0.74	0.41
d, Delay for Lane Group [s/veh]	61.44	68.41	62.69	59.89	43.39	32.84	32.82	59.10	39.66	44.96	54.99	29.59	5.07
Lane Group LOS	E	E	E	E	D	C	C	E	D	D	D	C	A
Critical Lane Group	No	Yes	No	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.02	5.78	5.10	4.64	13.86	7.63	7.61	0.25	11.37	12.35	7.79	15.07	4.25
50th-Percentile Queue Length [ft/ln]	75.59	144.6	127.3	115.9	346.38	190.75	190.16	6.34	284.25	308.75	194.83	376.63	106.26
95th-Percentile Queue Length [veh/ln]	5.44	9.73	8.80	8.17	19.96	12.16	12.13	0.46	16.90	18.11	12.37	21.43	7.63
95th-Percentile Queue Length [ft/ln]	136.0	243.2	219.9	204.3	498.99	304.00	303.23	11.41	422.50	452.84	309.29	535.77	190.78

Movement, Approach, & Intersection Results

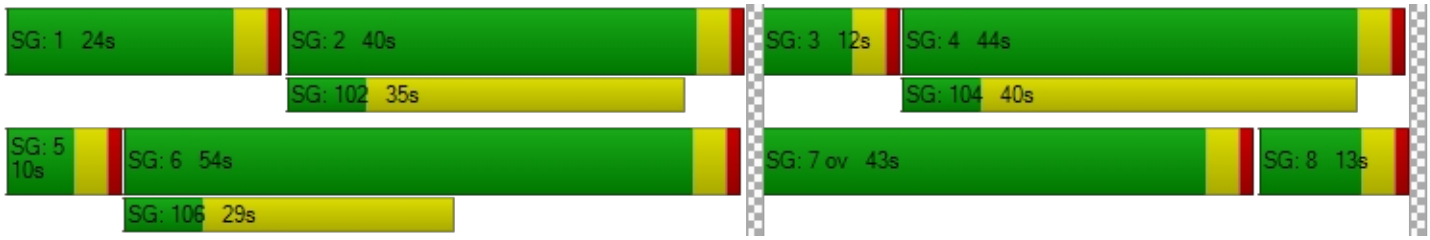
d_M, Delay for Movement [s/veh]	61.44	66.65	60.80	43.39	32.83	32.82	59.10	40.40	44.96	54.99	29.59	5.07
Movement LOS	E	E	E	D	C	C	E	D	D	D	C	A
d_A, Approach Delay [s/veh]	63.18			39.14			41.17			28.90		
Approach LOS	E			D			D			C		
d_I, Intersection Delay [s/veh]	37.51											
Intersection LOS	D											
Intersection V/C	0.841											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.52	49.52	49.52	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.889	2.867	3.273	0.000
Crosswalk LOS	C	C	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	150	666	600	833
d_b, Bicycle Delay [s]	51.35	26.68	29.41	20.43
l_b,int, Bicycle LOS Score for Intersection	2.102	2.879	2.263	3.202
Bicycle LOS	B	C	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: SR-57 SB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	29.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.887

Intersection Setup

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	0	0	0	1071	0	708	0	1902	635	246	2202	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	1071	0	708	0	1902	635	246	2202	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.8640	1.0000	0.8640	1.0000	0.9400	0.9400	0.9190	0.9190	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	310	0	205	0	506	169	67	599	0
Total Analysis Volume [veh/h]	0	0	0	1240	0	819	0	2023	676	268	2396	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	7	0	0	0	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	6	0	0	0	6	0	6	6	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	50	0	0	0	42	0	13	55	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	12	0	0	20	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall				No				No		No	No	
Maximum Recall				No				No		No	No	
Pedestrian Recall				No				No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	R	C	R	L	C
C, Cycle Length [s]		105	105	105	105	105	105
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		42	42	42	42	9	55
g / C, Green / Cycle		0.40	0.40	0.40	0.40	0.09	0.52
(v / s)_i Volume / Saturation Flow Rate		0.35	0.22	0.35	0.18	0.08	0.42
s, saturation flow rate [veh/h]		3500	3800	5700	3800	3500	5700
c, Capacity [veh/h]		1396	1516	2282	1521	303	2992
d1, Uniform Delay [s]		29.37	24.18	29.27	22.97	47.44	20.44
k, delay calibration		0.11	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		2.12	0.30	5.57	0.94	8.50	2.36
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.89	0.54	0.89	0.44	0.89	0.80
d, Delay for Lane Group [s/veh]		31.49	24.48	34.83	23.91	55.94	22.80
Lane Group LOS		C	C	C	C	E	C
Critical Lane Group		Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]		14.47	7.71	16.43	6.20	3.81	15.77
50th-Percentile Queue Length [ft/ln]		361.82	192.70	410.85	155.01	95.17	394.35
95th-Percentile Queue Length [veh/ln]		20.71	12.26	23.08	10.28	6.85	22.29
95th-Percentile Queue Length [ft/ln]		517.80	306.53	577.06	257.11	171.31	557.18

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	31.49	0.00	24.48	0.00	34.83	23.91	55.94	22.80	0.00
Movement LOS				C		C		C	C	E	C	
d_A, Approach Delay [s/veh]	0.00			28.70			32.10			26.14		
Approach LOS	A			C			C			C		
d_I, Intersection Delay [s/veh]	29.02											
Intersection LOS	C											
Intersection V/C	0.887											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	42.07	42.07	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.182	2.640	0.000	0.000
Crosswalk LOS	B	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	876	724	971
d_b, Bicycle Delay [s]	52.50	16.57	21.37	13.88
l_b,int, Bicycle LOS Score for Intersection	4.132	1.560	3.044	3.025
Bicycle LOS	D	A	C	C

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 3: SR-57 NB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	27.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.901

Intersection Setup

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			No			No			No		

Volumes

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	1080	0	512	0	0	0	0	2555	408	0	1380	498
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1080	0	512	0	0	0	0	2555	408	0	1380	498
Peak Hour Factor	0.8940	1.0000	0.8940	1.0000	1.0000	1.0000	0.9710	0.9710	0.9710	1.0000	0.8830	0.8830
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	302	0	143	0	0	0	0	658	105	0	391	0
Total Analysis Volume [veh/h]	1208	0	573	0	0	0	0	2631	420	0	1563	0
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Permiss	Split	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna
Signal Group	3	0	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	0	0	0	0	0	0	6	0	0	6	0
Maximum Green [s]	30	0	0	0	0	0	0	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	79	0	0	0	0	0	0	36	0	0	36	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	25	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R		C	C	R	C
C, Cycle Length [s]	115	115		115	115	115	115
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	46	46		61	61	61	61
g / C, Green / Cycle	0.40	0.40		0.53	0.53	0.53	0.53
(v / s)_i Volume / Saturation Flow Rate	0.35	0.30		0.46	0.46	0.22	0.27
s, saturation flow rate [veh/h]	3500	1900		3800	1900	1900	5700
c, Capacity [veh/h]	1390	755		2026	1013	1013	3039
d1, Uniform Delay [s]	31.86	29.87		23.24	23.24	16.06	17.24
k, delay calibration	0.11	0.11		0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.80	1.60		5.27	9.85	1.25	0.63
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.87	0.76		0.87	0.87	0.41	0.51
d, Delay for Lane Group [s/veh]	33.66	31.47		28.51	33.09	17.31	17.86
Lane Group LOS	C	C		C	C	B	B
Critical Lane Group	Yes	No		Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	15.42	13.74		21.08	22.37	6.84	8.81
50th-Percentile Queue Length [ft/ln]	385.52	343.59		526.96	559.19	170.98	220.30
95th-Percentile Queue Length [veh/ln]	21.86	19.82		28.61	30.12	11.13	13.68
95th-Percentile Queue Length [ft/ln]	546.53	495.59		715.19	753.10	278.20	342.00

Movement, Approach, & Intersection Results

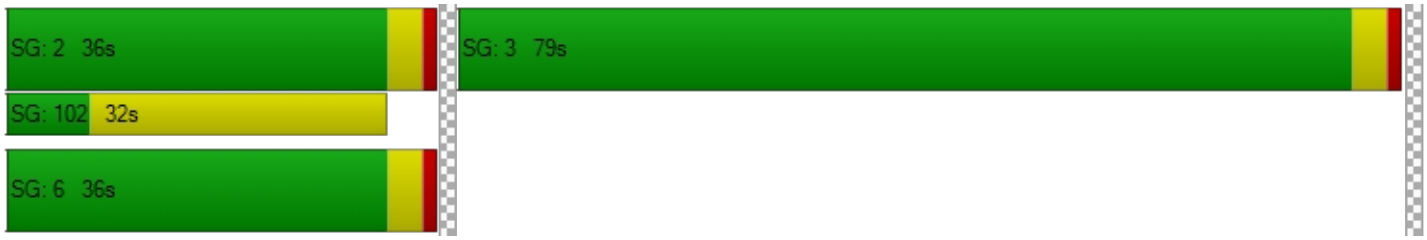
d_M, Delay for Movement [s/veh]	33.66	0.00	31.47	0.00	0.00	0.00	0.00	29.55	17.31	0.00	17.86	0.00
Movement LOS	C		C					C	B		B	
d_A, Approach Delay [s/veh]	32.96			0.00			28.28			17.86		
Approach LOS	C			A			C			B		
d_I, Intersection Delay [s/veh]	27.04											
Intersection LOS	C											
Intersection V/C	0.901											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	46.98	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.741	0.000	0.000	0.000
Crosswalk LOS	B	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1305	0	557	557
d_b, Bicycle Delay [s]	6.93	57.45	29.91	29.91
l_b,int, Bicycle LOS Score for Intersection	1.560	4.132	3.238	2.419
Bicycle LOS	A	D	C	B

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Randolph Avenue at Birch Street

Control Type:	Signalized	Delay (sec / veh):	14.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.397

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Base Volume Input [veh/h]	25	42	93	38	36	26	41	622	94	80	566	45
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	25	42	93	38	36	26	41	622	94	80	566	45
Peak Hour Factor	0.8140	0.8140	0.8140	0.7190	0.7190	0.7190	0.8220	0.8220	0.8220	0.8940	0.8940	0.8940
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	13	29	13	13	9	12	189	29	22	158	13
Total Analysis Volume [veh/h]	31	52	114	53	50	36	50	757	114	89	633	50
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	38	0	0	38	0	11	30	0	22	41	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	25	0	0	19	0	0	18	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	8	8	8	8	4	65	65	6	66	66
g / C, Green / Cycle	0.09	0.09	0.09	0.09	0.09	0.05	0.72	0.72	0.06	0.73	0.73
(v / s)_i Volume / Saturation Flow Rate	0.02	0.03	0.06	0.03	0.05	0.03	0.23	0.22	0.05	0.17	0.03
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1800	1900	1900	1800	3800	1900
c, Capacity [veh/h]	122	163	163	154	163	88	1360	1360	117	2783	1392
d1, Uniform Delay [s]	38.31	38.71	40.05	38.79	39.44	41.91	4.74	4.68	41.39	3.87	3.31
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.07	1.12	5.41	1.33	2.66	5.70	0.64	0.60	9.55	0.19	0.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.25	0.32	0.70	0.35	0.53	0.57	0.33	0.31	0.76	0.23	0.04
d, Delay for Lane Group [s/veh]	39.39	39.83	45.46	40.12	42.09	47.61	5.39	5.28	50.94	4.06	3.36
Lane Group LOS	D	D	D	D	D	D	A	A	D	A	A
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.67	1.12	2.67	1.15	1.92	1.21	2.69	2.53	2.23	1.51	0.21
50th-Percentile Queue Length [ft/ln]	16.68	27.99	66.72	28.71	48.02	30.37	67.16	63.22	55.77	37.76	5.32
95th-Percentile Queue Length [veh/ln]	1.20	2.02	4.80	2.07	3.46	2.19	4.84	4.55	4.02	2.72	0.38
95th-Percentile Queue Length [ft/ln]	30.02	50.38	120.09	51.68	86.44	54.67	120.89	113.79	100.39	67.96	9.58

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	39.39	39.83	45.46	40.12	42.09	42.09	47.61	5.34	5.28	50.94	4.06	3.36
Movement LOS	D	D	D	D	D	D	D	A	A	D	A	A
d_A, Approach Delay [s/veh]	43.02			41.34			7.63			9.42		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	14.06											
Intersection LOS	B											
Intersection V/C	0.397											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	34.68	34.68
l_p,int, Pedestrian LOS Score for Intersection	2.240	2.034	2.660	2.803
Crosswalk LOS	B	B	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	755	755	578	822
d_b, Bicycle Delay [s]	17.43	17.43	22.77	15.62
l_b,int, Bicycle LOS Score for Intersection	1.885	1.789	2.319	2.197
Bicycle LOS	A	A	B	B

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 5: State College Boulevard at Birch Street

Control Type:	Signalized	Delay (sec / veh):	40.6
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.691

Intersection Setup

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Base Volume Input [veh/h]	80	151	100	696	864	232	115	543	50	81	596	304
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	151	100	696	864	232	115	543	50	81	596	304
Peak Hour Factor	0.8430	0.8430	0.8430	0.8910	0.8910	0.8910	0.8600	0.8600	0.8600	0.7640	0.7640	0.7640
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	45	30	195	242	65	33	158	15	27	195	99
Total Analysis Volume [veh/h]	95	179	119	781	970	260	134	631	58	106	780	398
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	26	39	0	32	45	0	10	39	0	10	39	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	28	0	0	30	0	0	28	0	0	26	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	20	20	28	42	42	6	50	50	6	50	50
g / C, Green / Cycle	0.05	0.17	0.17	0.23	0.35	0.35	0.05	0.42	0.42	0.05	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.03	0.05	0.06	0.22	0.32	0.32	0.04	0.17	0.03	0.03	0.21	0.21
s, saturation flow rate [veh/h]	3500	3800	1900	3500	1900	1900	3500	3800	1900	3500	3800	1900
c, Capacity [veh/h]	170	643	322	816	672	672	178	1576	788	173	1571	786
d1, Uniform Delay [s]	55.84	43.48	44.20	45.43	37.06	37.06	56.25	24.65	21.20	55.95	25.99	26.13
k, delay calibration	0.11	0.11	0.11	0.11	0.23	0.23	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.84	0.23	0.71	7.56	10.46	10.46	6.36	0.76	0.18	3.51	1.12	2.33
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.56	0.28	0.37	0.96	0.91	0.91	0.75	0.40	0.07	0.61	0.50	0.51
d, Delay for Lane Group [s/veh]	58.68	43.71	44.90	52.99	47.52	47.52	62.60	25.41	21.38	59.46	27.11	28.46
Lane Group LOS	E	D	D	D	D	D	E	C	C	E	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.48	2.35	3.22	12.26	18.92	18.92	2.16	6.45	1.03	1.66	8.42	8.89
50th-Percentile Queue Length [ft/ln]	36.89	58.82	80.38	306.44	473.02	473.02	54.04	161.17	25.82	41.49	210.39	222.26
95th-Percentile Queue Length [veh/ln]	2.66	4.23	5.79	18.00	26.05	26.05	3.89	10.61	1.86	2.99	13.17	13.78
95th-Percentile Queue Length [ft/ln]	66.40	105.87	144.68	449.98	651.37	651.37	97.28	265.27	46.48	74.69	329.33	344.51

Movement, Approach, & Intersection Results

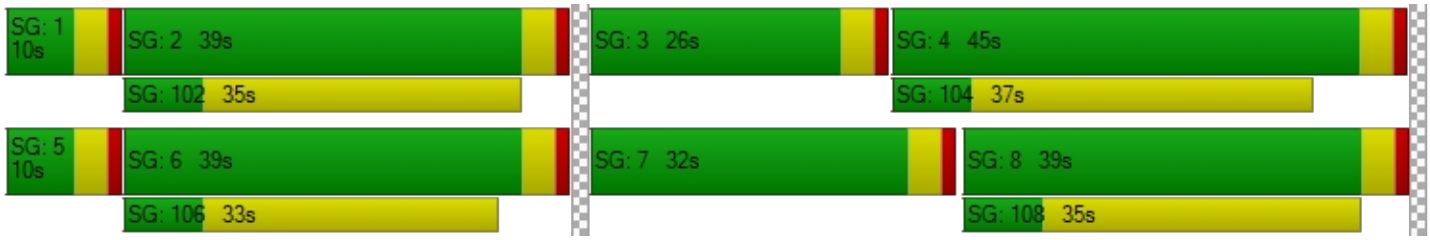
d_M, Delay for Movement [s/veh]	58.68	43.71	44.90	52.99	47.52	47.52	62.60	25.41	21.38	59.46	27.11	28.46
Movement LOS	E	D	D	D	D	D	E	C	C	E	C	C
d_A, Approach Delay [s/veh]	47.69			49.64			31.18			30.20		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	40.57											
Intersection LOS	D											
Intersection V/C	0.691											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.52	49.52	49.52	49.52
l_p,int, Pedestrian LOS Score for Intersection	2.820	2.909	2.880	3.000
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	583	683	583	583
d_b, Bicycle Delay [s]	30.12	26.02	30.12	30.12
l_b,int, Bicycle LOS Score for Intersection	1.884	3.219	2.239	2.619
Bicycle LOS	A	C	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: S Associated Road at Birch Street

Control Type:	Signalized	Delay (sec / veh):	28.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.813

Intersection Setup

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Base Volume Input [veh/h]	255	6	323	57	29	9	5	986	335	357	803	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	255	6	323	57	29	9	5	986	335	357	803	11
Peak Hour Factor	0.8160	0.8160	0.8160	0.7410	0.7410	0.7410	0.8560	0.8560	0.8560	0.9140	0.9140	0.9140
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	78	2	99	19	10	3	1	288	98	98	220	3
Total Analysis Volume [veh/h]	313	7	396	77	39	12	6	1152	391	391	879	12
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	8	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups			1,8									
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	6	0	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	30	0	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	24	61	61	0	37	0	10	38	0	21	49	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	26	26	0	26	0	0	27	0	0	26	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No		No		No	No		No	No	
Maximum Recall	No	No	No		No		No	No		No	No	
Pedestrian Recall	No	No	No		No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	24	45	7	7	1	67	67	17	83	83
g / C, Green / Cycle	0.11	0.20	0.38	0.06	0.06	0.01	0.56	0.56	0.14	0.69	0.69
(v / s)_i Volume / Saturation Flow Rate	0.09	0.00	0.21	0.04	0.03	0.00	0.42	0.39	0.11	0.23	0.23
s, saturation flow rate [veh/h]	3500	1900	1900	1800	1900	1800	1900	1900	3500	1900	1900
c, Capacity [veh/h]	382	385	718	137	114	18	1055	1055	497	1306	1306
d1, Uniform Delay [s]	52.31	38.29	29.33	55.39	54.48	59.03	20.39	19.60	49.75	7.68	7.67
k, delay calibration	0.11	0.11	0.33	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.35	0.02	2.01	3.56	2.71	10.37	4.97	4.05	2.81	0.71	0.71
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.82	0.02	0.55	0.56	0.45	0.33	0.75	0.71	0.79	0.34	0.34
d, Delay for Lane Group [s/veh]	56.66	38.31	31.34	58.95	57.19	69.40	25.36	23.65	52.56	8.39	8.38
Lane Group LOS	E	D	C	E	E	E	C	C	D	A	A
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.84	0.17	9.34	2.43	1.58	0.23	17.71	15.93	5.86	4.64	4.62
50th-Percentile Queue Length [ft/ln]	121.03	4.22	233.56	60.63	39.44	5.84	442.80	398.23	146.41	116.06	115.40
95th-Percentile Queue Length [veh/ln]	8.45	0.30	14.36	4.37	2.84	0.42	24.61	22.47	9.83	8.18	8.14
95th-Percentile Queue Length [ft/ln]	211.24	7.59	358.88	109.13	70.99	10.50	615.36	561.87	245.63	204.39	203.49

Movement, Approach, & Intersection Results

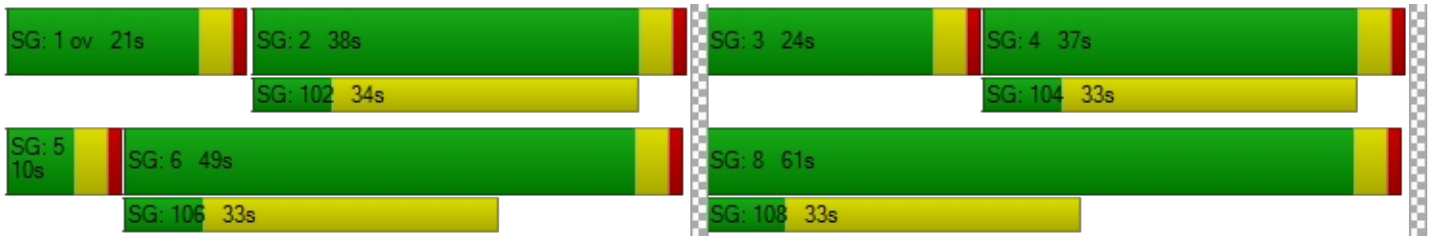
d_M, Delay for Movement [s/veh]	56.66	38.31	31.34	58.95	57.19	57.19	69.40	24.83	23.65	52.56	8.38	8.38
Movement LOS	E	D	C	E	E	E	E	C	C	D	A	A
d_A, Approach Delay [s/veh]	42.48			58.25			24.70			21.86		
Approach LOS	D			E			C			C		
d_I, Intersection Delay [s/veh]	28.34											
Intersection LOS	C											
Intersection V/C	0.813											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.52	49.52	49.52	49.52
l_p,int, Pedestrian LOS Score for Intersection	2.716	2.004	2.850	3.049
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	950	550	567	750
d_b, Bicycle Delay [s]	16.55	31.55	30.83	23.45
l_b,int, Bicycle LOS Score for Intersection	2.741	1.771	2.838	2.617
Bicycle LOS	B	A	C	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 7: Randolph Avenue at Madison Way

Control Type:	Signalized	Delay (sec / veh):	17.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.150

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Base Volume Input [veh/h]	26	139	8	6	130	17	35	2	59	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	139	8	6	130	17	35	2	59	0	0	0
Peak Hour Factor	0.9010	0.9010	0.9010	0.6500	0.6500	0.6500	0.5970	0.5970	0.5970	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	39	2	2	50	7	15	1	25	0	0	0
Total Analysis Volume [veh/h]	29	154	9	9	200	26	59	3	99	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	6	6	0	6	6	0	0	6	0	0	6	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	26	0	10	26	0	0	54	0	0	54	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	15	0	0	12	0	0	19	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	70	70	1	68	68	7	7	7	7
g / C, Green / Cycle	0.04	0.78	0.78	0.01	0.75	0.75	0.08	0.08	0.08	0.08
(v / s)_i Volume / Saturation Flow Rate	0.02	0.04	0.04	0.01	0.06	0.06	0.03	0.05	0.00	0.00
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1900	1800	1900	1800	1900
c, Capacity [veh/h]	64	1471	1471	26	1431	1431	185	148	93	148
d1, Uniform Delay [s]	42.56	2.40	2.40	43.93	2.91	2.91	39.59	40.46	0.00	0.00
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.91	0.07	0.07	7.37	0.11	0.11	0.98	5.63	0.00	0.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.45	0.06	0.06	0.34	0.08	0.08	0.32	0.69	0.00	0.00
d, Delay for Lane Group [s/veh]	47.47	2.47	2.47	51.30	3.02	3.02	40.56	46.09	0.00	0.00
Lane Group LOS	D	A	A	D	A	A	D	D	A	A
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.71	0.26	0.26	0.25	0.44	0.43	1.28	2.41	0.00	0.00
50th-Percentile Queue Length [ft/ln]	17.84	6.58	6.54	6.28	10.96	10.76	32.04	60.17	0.00	0.00
95th-Percentile Queue Length [veh/ln]	1.28	0.47	0.47	0.45	0.79	0.77	2.31	4.33	0.00	0.00
95th-Percentile Queue Length [ft/ln]	32.12	11.85	11.76	11.30	19.73	19.37	57.68	108.31	0.00	0.00

Movement, Approach, & Intersection Results

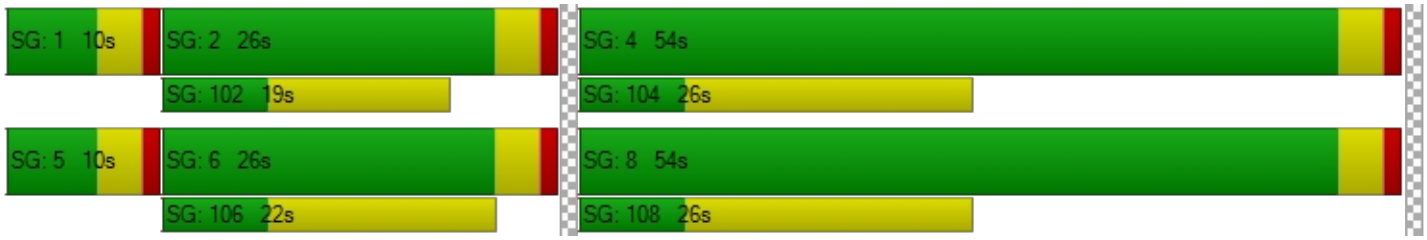
d_M, Delay for Movement [s/veh]	47.47	2.47	2.47	51.30	3.02	3.02	40.56	46.09	46.09	0.00	0.00	0.00
Movement LOS	D	A	A	D	A	A	D	D	D	A	A	A
d_A, Approach Delay [s/veh]	9.27			4.87			44.06			0.00		
Approach LOS	A			A			D			A		
d_I, Intersection Delay [s/veh]	17.04											
Intersection LOS	B											
Intersection V/C	0.150											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	34.68	34.68
l_p,int, Pedestrian LOS Score for Intersection	2.395	2.471	2.010	1.947
Crosswalk LOS	B	B	B	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	489	489	1111	1111
d_b, Bicycle Delay [s]	25.70	25.70	8.90	8.90
l_b,int, Bicycle LOS Score for Intersection	1.718	1.753	1.825	1.560
Bicycle LOS	A	A	A	A

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 8: Randolph Avenue at Brea Mall

Control Type:	Signalized	Delay (sec / veh):	8.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.115

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Base Volume Input [veh/h]	14	181	69	16	158	6	1	0	1	27	0	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	181	69	16	158	6	1	0	1	27	0	5
Peak Hour Factor	0.8280	0.8280	0.8280	0.9050	0.9050	0.9050	0.2500	0.2500	0.2500	0.6000	0.6000	0.6000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	55	21	4	44	2	1	0	1	11	0	2
Total Analysis Volume [veh/h]	17	219	83	18	175	7	4	0	4	45	0	8
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	6	6	0	6	6	0	0	6	0	0	6	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	30	0	10	30	0	0	30	0	0	30	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	17	0	0	18	0	0	19	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	R	L	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	82	76	76	82	76	76	1	1	5	5
g / C, Green / Cycle	0.82	0.76	0.76	0.82	0.76	0.76	0.01	0.01	0.05	0.05
(v / s)_i Volume / Saturation Flow Rate	0.01	0.08	0.08	0.01	0.05	0.05	0.00	0.00	0.01	0.01
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1900	1800	1900	1800	1900
c, Capacity [veh/h]	1554	1437	1437	1536	1439	1439	23	24	84	89
d1, Uniform Delay [s]	1.62	3.23	3.22	1.62	3.09	3.09	48.89	48.89	46.14	46.10
k, delay calibration	0.11	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.00	0.15	0.14	0.01	0.08	0.08	3.66	3.25	2.12	1.84
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.01	0.11	0.10	0.01	0.06	0.06	0.18	0.17	0.32	0.30
d, Delay for Lane Group [s/veh]	1.63	3.38	3.36	1.64	3.17	3.17	52.55	52.14	48.26	47.94
Lane Group LOS	A	A	A	A	A	A	D	D	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.04	0.71	0.67	0.04	0.40	0.40	0.12	0.12	0.69	0.68
50th-Percentile Queue Length [ft/ln]	0.92	17.79	16.79	1.09	10.02	9.97	3.04	3.00	17.18	16.93
95th-Percentile Queue Length [veh/ln]	0.07	1.28	1.21	0.08	0.72	0.72	0.22	0.22	1.24	1.22
95th-Percentile Queue Length [ft/ln]	1.66	32.03	30.23	1.97	18.04	17.95	5.46	5.40	30.92	30.48

Movement, Approach, & Intersection Results

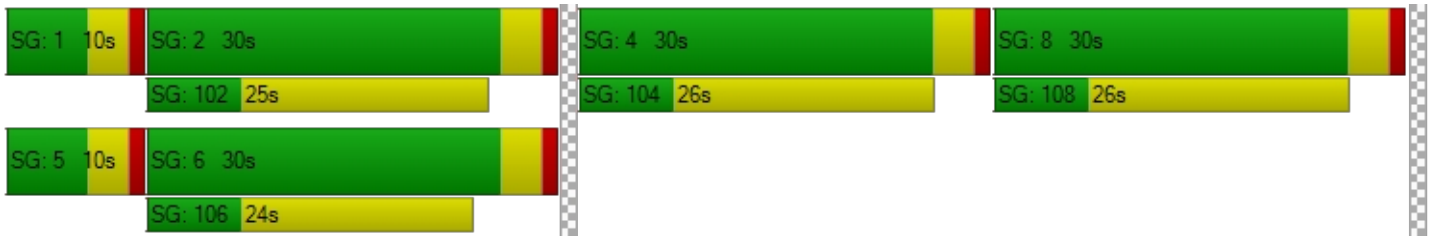
d_M, Delay for Movement [s/veh]	1.63	3.37	3.36	1.64	3.17	3.17	52.55	52.55	52.14	48.13	47.94	47.94
Movement LOS	A	A	A	A	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	3.28			3.04			52.34			48.10		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	7.97											
Intersection LOS	A											
Intersection V/C	0.115											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	39.62	39.62	39.62	39.62
l_p,int, Pedestrian LOS Score for Intersection	2.411	2.389	1.974	2.015
Crosswalk LOS	B	B	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	520	520	520	520
d_b, Bicycle Delay [s]	27.40	27.40	27.40	27.40
l_b,int, Bicycle LOS Score for Intersection	1.823	1.725	1.573	1.647
Bicycle LOS	A	A	A	A

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 9: Brea Mall South at State College Boulevard

Control Type:	Signalized	Delay (sec / veh):	15.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.232

Intersection Setup

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Base Volume Input [veh/h]	33	9	16	3	6	28	80	270	16	28	381	12
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	33	9	16	3	6	28	80	270	16	28	381	12
Peak Hour Factor	0.5830	0.5830	0.5830	0.5500	0.5500	0.5500	0.8240	0.8240	0.8240	0.9420	0.9420	0.9420
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	4	7	1	3	13	24	82	5	7	101	3
Total Analysis Volume [veh/h]	57	15	27	5	11	51	97	328	19	30	404	13
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	4	5	2	0	1	6	0
Auxiliary Signal Groups						4,5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	6	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	30	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	37	0	0	10	10	11	33	0	10	32	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	26	0	0	0	0	0	20	0	0	21	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No	No	No	No		No	No	
Maximum Recall		No			No	No	No	No		No	No	
Pedestrian Recall		No			No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	C	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	6	6	5	5	24	6	60	60	3	58	58
g / C, Green / Cycle	0.06	0.06	0.06	0.05	0.05	0.27	0.06	0.67	0.67	0.04	0.64	0.64
(v / s)_i Volume / Saturation Flow Rate	0.01	0.03	0.01	0.00	0.00	0.03	0.03	0.09	0.09	0.02	0.11	0.11
s, saturation flow rate [veh/h]	1800	1800	1900	1800	1900	1900	3500	1900	1900	1800	1900	1900
c, Capacity [veh/h]	158	180	118	100	105	510	217	1270	1270	66	1222	1222
d1, Uniform Delay [s]	40.12	40.82	40.23	40.42	40.39	24.81	40.81	5.46	5.45	42.56	6.46	6.45
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.38	0.85	0.97	0.36	0.29	0.08	1.45	0.23	0.22	4.84	0.30	0.30
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.13	0.28	0.23	0.08	0.07	0.10	0.45	0.14	0.14	0.46	0.17	0.17
d, Delay for Lane Group [s/veh]	40.50	41.67	41.20	40.77	40.68	24.90	42.26	5.69	5.68	47.40	6.76	6.75
Lane Group LOS	D	D	D	D	D	C	D	A	A	D	A	A
Critical Lane Group	No	Yes	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.45	1.13	0.60	0.18	0.17	0.82	1.07	1.11	1.10	0.74	1.52	1.50
50th-Percentile Queue Length [ft/ln]	11.32	28.13	14.90	4.61	4.19	20.57	26.79	27.83	27.42	18.42	37.92	37.59
95th-Percentile Queue Length [veh/ln]	0.82	2.03	1.07	0.33	0.30	1.48	1.93	2.00	1.97	1.33	2.73	2.71
95th-Percentile Queue Length [ft/ln]	20.38	50.63	26.82	8.29	7.55	37.02	48.21	50.10	49.35	33.15	68.26	67.66

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.19	41.67	41.20	40.77	40.71	24.90	42.26	5.68	5.68	47.40	6.76	6.75
Movement LOS	D	D	D	D	D	C	D	A	A	D	A	A
d_A, Approach Delay [s/veh]	41.29			28.68			13.67			9.48		
Approach LOS	D			C			B			A		
d_I, Intersection Delay [s/veh]	15.44											
Intersection LOS	B											
Intersection V/C	0.232											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.72	34.72	0.00	34.72
l_p,int, Pedestrian LOS Score for Intersection	2.330	2.337	0.000	2.457
Crosswalk LOS	B	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	733	133	644	622
d_b, Bicycle Delay [s]	18.09	39.24	20.71	21.40
l_b,int, Bicycle LOS Score for Intersection	1.723	1.615	1.926	1.928
Bicycle LOS	A	A	A	A

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 10: Harbor Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	45.1
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.926

Intersection Setup

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	314	712	279	170	1318	318	289	1395	375	313	1247	262
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	314	712	279	170	1318	318	289	1395	375	313	1247	262
Peak Hour Factor	0.8230	0.8230	0.8230	0.9630	0.9630	0.9630	0.8630	0.8630	0.8630	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	95	216	85	44	342	83	84	404	109	80	318	67
Total Analysis Volume [veh/h]	382	865	339	177	1369	330	335	1616	435	319	1272	267
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	18	45	0	12	39	0	18	47	0	16	45	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	31	0	0	28	0	0	31	0	0	29	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	39	39	8	33	33	13	45	45	12	44	44
g / C, Green / Cycle	0.12	0.32	0.32	0.07	0.27	0.27	0.11	0.38	0.38	0.10	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.11	0.15	0.18	0.05	0.24	0.17	0.10	0.36	0.36	0.09	0.22	0.14
s, saturation flow rate [veh/h]	3500	5700	1900	3500	5700	1900	3500	3800	1900	3500	5700	1900
c, Capacity [veh/h]	410	1838	613	234	1551	517	392	1432	716	352	2084	695
d1, Uniform Delay [s]	52.53	32.49	33.54	55.06	41.85	38.48	52.36	36.52	36.19	53.44	31.11	28.12
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.16	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.82	0.19	0.78	4.94	1.82	1.93	5.42	15.96	22.47	8.86	1.34	1.61
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.93	0.47	0.55	0.76	0.88	0.64	0.86	0.96	0.94	0.91	0.61	0.38
d, Delay for Lane Group [s/veh]	62.35	32.68	34.33	59.99	43.67	40.42	57.78	52.48	58.66	62.30	32.45	29.73
Lane Group LOS	E	C	C	E	D	D	E	D	E	E	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	6.25	6.72	8.25	2.79	13.09	8.81	5.25	22.46	23.26	5.19	10.24	5.99
50th-Percentile Queue Length [ft/ln]	156.35	168.03	206.33	69.82	327.21	220.18	131.18	561.39	581.59	129.79	255.92	149.74
95th-Percentile Queue Length [veh/ln]	10.36	10.97	12.96	5.03	19.02	13.67	9.00	30.23	31.17	8.93	15.48	10.00
95th-Percentile Queue Length [ft/ln]	258.88	274.32	324.12	125.67	475.53	341.86	225.09	755.68	779.35	223.21	387.10	250.08

Movement, Approach, & Intersection Results

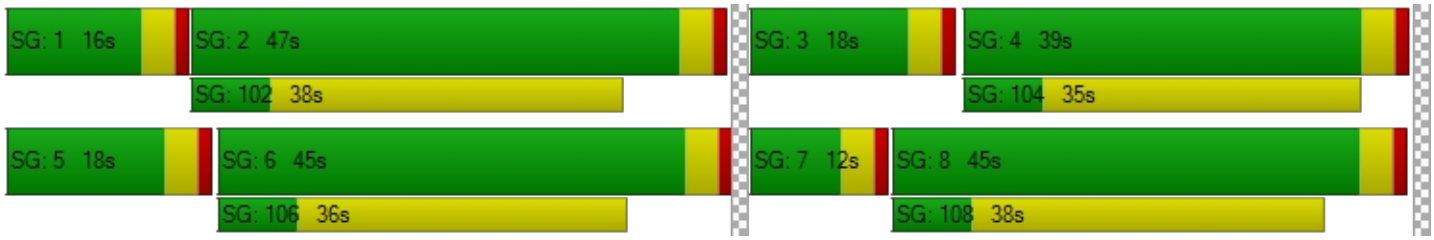
d_M, Delay for Movement [s/veh]	62.35	32.68	34.33	59.99	43.67	40.42	57.78	53.40	58.66	62.30	32.45	29.73
Movement LOS	E	C	C	E	D	D	E	D	E	E	C	C
d_A, Approach Delay [s/veh]	40.18			44.64			54.98			37.18		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	45.12											
Intersection LOS	D											
Intersection V/C	0.926											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.52	49.52	49.52	49.52
l_p,int, Pedestrian LOS Score for Intersection	3.265	3.225	3.272	3.295
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	683	583	716	683
d_b, Bicycle Delay [s]	26.02	30.12	24.72	26.02
l_b,int, Bicycle LOS Score for Intersection	2.432	2.591	2.872	2.582
Bicycle LOS	B	B	C	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 11: Puente Street at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	20.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.589

Intersection Setup

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	61	118	158	136	87	148	234	1447	81	50	1479	173
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	61	118	158	136	87	148	234	1447	81	50	1479	173
Peak Hour Factor	0.8950	0.8950	0.8950	0.8510	0.8510	0.8510	0.8710	0.8710	0.8710	0.9670	0.9670	0.9670
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	33	44	40	26	43	67	415	23	13	382	45
Total Analysis Volume [veh/h]	68	132	177	160	102	174	269	1661	93	52	1529	179
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	39	0	0	39	0	17	31	0	20	34	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	23	0	0	17	0	0	23	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	11	11	11	11	11	13	63	63	4	54	54
g / C, Green / Cycle	0.12	0.12	0.12	0.12	0.12	0.12	0.14	0.70	0.70	0.05	0.60	0.60
(v / s)_i Volume / Saturation Flow Rate	0.04	0.07	0.09	0.09	0.03	0.09	0.15	0.31	0.31	0.03	0.27	0.09
s, saturation flow rate [veh/h]	1800	1900	1900	1800	3800	1900	1800	3800	1900	1800	5700	1900
c, Capacity [veh/h]	222	232	232	148	465	232	261	2640	1320	89	3416	1139
d1, Uniform Delay [s]	36.05	37.27	38.25	37.79	35.64	38.18	38.49	6.04	6.11	41.87	9.88	7.98
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.78	2.18	5.11	58.82	0.24	4.79	33.84	0.53	1.11	5.86	0.43	0.29
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.31	0.57	0.76	1.08	0.22	0.75	1.03	0.44	0.45	0.58	0.45	0.16
d, Delay for Lane Group [s/veh]	36.82	39.45	43.35	96.61	35.88	42.97	72.33	6.57	7.22	47.74	10.30	8.27
Lane Group LOS	D	D	D	F	D	D	F	A	A	D	B	A
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.40	2.85	4.05	5.49	1.01	3.96	8.11	4.14	4.50	1.26	5.09	1.50
50th-Percentile Queue Length [ft/ln]	34.89	71.15	101.30	137.18	25.37	99.05	202.71	103.46	112.56	31.61	127.36	37.51
95th-Percentile Queue Length [veh/ln]	2.51	5.12	7.29	9.61	1.83	7.13	12.95	7.45	7.98	2.28	8.80	2.70
95th-Percentile Queue Length [ft/ln]	62.80	128.06	182.34	240.24	45.66	178.28	323.65	186.23	199.56	56.90	219.90	67.52

Movement, Approach, & Intersection Results

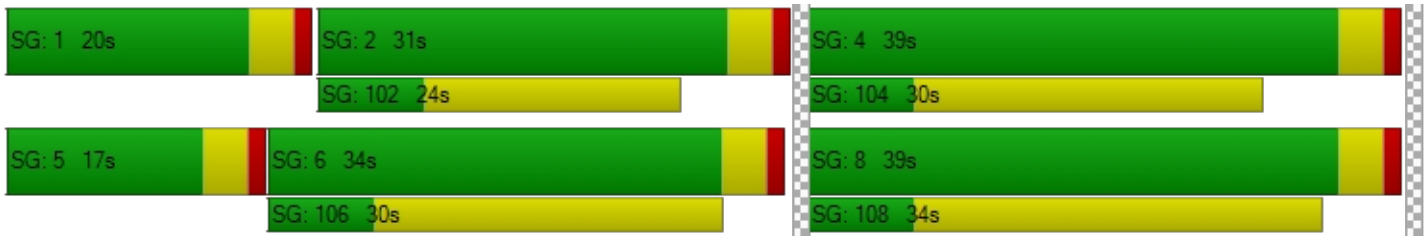
d_M, Delay for Movement [s/veh]	36.82	39.45	43.35	96.61	35.88	42.97	72.33	6.77	7.22	47.74	10.30	8.27
Movement LOS	D	D	D	F	D	D	F	A	A	D	B	A
d_A, Approach Delay [s/veh]	40.81			60.99			15.50			11.20		
Approach LOS	D			E			B			B		
d_I, Intersection Delay [s/veh]	20.25											
Intersection LOS	C											
Intersection V/C	0.589											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	34.68	34.68
l_p,int, Pedestrian LOS Score for Intersection	2.421	2.497	3.219	3.411
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	778	778	600	666
d_b, Bicycle Delay [s]	16.82	16.82	22.06	20.01
l_b,int, Bicycle LOS Score for Intersection	2.182	1.919	2.672	2.528
Bicycle LOS	B	A	B	B

Sequence

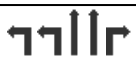
Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: Brea Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	46.8
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.968

Intersection Setup

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	450	501	158	172	1032	209	166	1604	367	167	1685	116
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	450	501	158	172	1032	209	166	1604	367	167	1685	116
Peak Hour Factor	0.7960	0.7960	0.7960	0.9500	0.9500	0.9500	0.9210	0.9210	0.9210	0.8690	0.8690	0.8690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	141	157	50	45	272	55	45	435	100	48	485	33
Total Analysis Volume [veh/h]	565	629	198	181	1086	220	180	1742	398	192	1939	133
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	24	41	0	22	39	0	11	46	0	11	46	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	30	0	0	28	0	0	30	0	0	30	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	20	47	47	8	35	35	7	42	42	7	42	42
g / C, Green / Cycle	0.17	0.39	0.39	0.07	0.29	0.29	0.06	0.35	0.35	0.06	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.16	0.11	0.10	0.05	0.29	0.12	0.05	0.31	0.21	0.05	0.34	0.07
s, saturation flow rate [veh/h]	3500	5700	1900	3500	3800	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	584	2208	736	245	1104	552	205	2000	667	205	2000	667
d1, Uniform Delay [s]	49.69	25.32	25.14	54.73	42.28	34.15	56.07	36.42	31.99	56.28	38.33	27.19
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.33	0.07	0.19	4.32	9.28	0.47	11.40	5.56	3.92	17.55	14.14	0.67
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.97	0.28	0.27	0.74	0.98	0.40	0.88	0.87	0.60	0.94	0.97	0.20
d, Delay for Lane Group [s/veh]	61.02	25.39	25.34	59.05	51.55	34.61	67.48	41.98	35.91	73.82	52.48	27.87
Lane Group LOS	E	C	C	E	D	C	E	D	D	E	D	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	9.30	4.14	3.91	2.83	17.20	5.23	3.03	16.72	10.18	3.39	21.00	2.81
50th-Percentile Queue Length [ft/ln]	232.62	103.60	97.82	70.77	429.91	130.84	75.72	418.10	254.38	84.86	525.11	70.22
95th-Percentile Queue Length [veh/ln]	14.31	7.46	7.04	5.10	24.00	8.99	5.45	23.43	15.41	6.11	28.52	5.06
95th-Percentile Queue Length [ft/ln]	357.68	186.47	176.07	127.38	599.93	224.63	136.29	585.77	385.16	152.74	713.01	126.39

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	61.02	25.39	25.34	59.05	51.55	34.61	67.48	41.98	35.91	73.82	52.48	27.87
Movement LOS	E	C	C	E	D	C	E	D	D	E	D	C
d_A, Approach Delay [s/veh]	39.84			49.96			42.92			52.84		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	46.76											
Intersection LOS	D											
Intersection V/C	0.968											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.51	49.51	49.51	49.51
l_p,int, Pedestrian LOS Score for Intersection	3.113	3.035	3.409	3.338
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	617	583	700	700
d_b, Bicycle Delay [s]	28.71	30.11	25.35	25.35
l_b,int, Bicycle LOS Score for Intersection	2.325	2.786	2.836	2.805
Bicycle LOS	B	C	C	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 13: Randolph Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	14.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.574

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	37	19	68	133	21	32	62	1683	26	41	1790	154
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	37	19	68	133	21	32	62	1683	26	41	1790	154
Peak Hour Factor	0.7700	0.7700	0.7700	0.8070	0.8070	0.8070	0.8950	0.8950	0.8950	0.8510	0.8510	0.8510
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	6	22	41	7	10	17	470	7	12	526	45
Total Analysis Volume [veh/h]	48	25	88	165	26	40	69	1880	29	48	2103	181
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	10	0	0	40	0	10	40	0	10	40	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	29	0	0	28	0	0	29	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	7	7	7	7	5	65	65	4	65	65
g / C, Green / Cycle	0.07	0.07	0.07	0.07	0.07	0.05	0.65	0.65	0.04	0.65	0.65
(v / s)_i Volume / Saturation Flow Rate	0.03	0.01	0.05	0.05	0.03	0.02	0.33	0.34	0.03	0.37	0.10
s, saturation flow rate [veh/h]	1800	1800	1900	3500	1900	3500	3800	1900	1800	5700	1900
c, Capacity [veh/h]	124	124	131	255	138	183	2481	1241	82	3682	1227
d1, Uniform Delay [s]	44.58	44.00	45.49	45.17	44.59	45.88	9.00	9.20	46.88	9.94	6.93
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.95	0.78	5.79	2.75	2.54	1.28	0.74	1.61	6.58	0.65	0.25
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.39	0.20	0.67	0.65	0.48	0.38	0.51	0.53	0.59	0.57	0.15
d, Delay for Lane Group [s/veh]	46.53	44.78	51.28	47.92	47.13	47.16	9.74	10.81	53.47	10.59	7.19
Lane Group LOS	D	D	D	D	D	D	A	B	D	B	A
Critical Lane Group	No	No	Yes	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.20	0.61	2.33	2.08	1.66	0.86	6.55	7.27	1.32	7.91	1.47
50th-Percentile Queue Length [ft/ln]	30.05	15.26	58.35	52.01	41.58	21.47	163.81	181.69	32.91	197.66	36.76
95th-Percentile Queue Length [veh/ln]	2.16	1.10	4.20	3.74	2.99	1.55	10.75	11.69	2.37	12.52	2.65
95th-Percentile Queue Length [ft/ln]	54.08	27.46	105.02	93.61	74.85	38.65	268.77	292.22	59.24	312.94	66.17

Movement, Approach, & Intersection Results

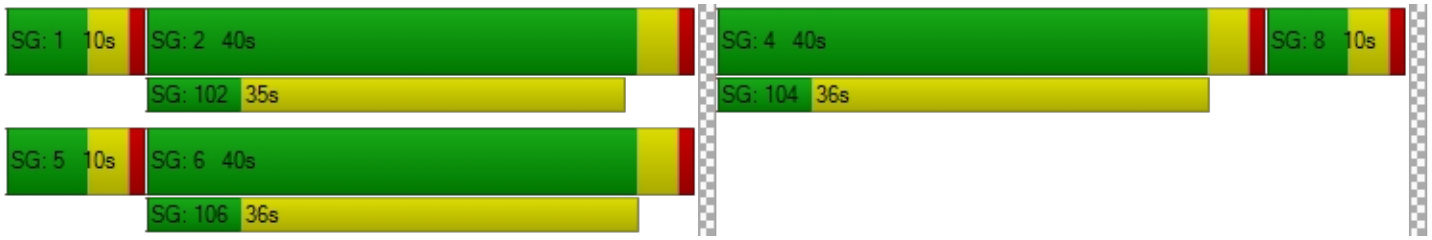
d_M, Delay for Movement [s/veh]	46.53	44.78	51.28	47.92	47.13	47.13	47.16	10.10	10.81	53.47	10.59	7.19
Movement LOS	D	D	D	D	D	D	D	B	B	D	B	A
d_A, Approach Delay [s/veh]	48.85			47.70			11.40			11.21		
Approach LOS	D			D			B			B		
d_I, Intersection Delay [s/veh]	14.37											
Intersection LOS	B											
Intersection V/C	0.574											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	39.64	39.64	39.64	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.200	2.403	3.238	0.000
Crosswalk LOS	B	B	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	120	719	719	719
d_b, Bicycle Delay [s]	44.22	20.51	20.51	20.51
l_b,int, Bicycle LOS Score for Intersection	1.692	1.941	2.648	2.842
Bicycle LOS	A	A	B	C

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 14: State College Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	34.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.851

Intersection Setup

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	115	160	429	102	392	28	35	1684	194	462	1845	146
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	115	160	429	102	392	28	35	1684	194	462	1845	146
Peak Hour Factor	0.9050	0.9050	0.9050	0.9420	0.9420	0.9420	0.9090	0.9090	0.9090	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	32	44	119	27	104	7	10	463	53	128	513	41
Total Analysis Volume [veh/h]	127	177	474	108	416	30	39	1853	213	513	2050	162
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	13	41	0	11	39	0	11	36	0	22	47	47
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	30	0	0	28	0	0	23	0	0	23	23
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	6	30	30	7	31	31	4	39	39	18	53	64
g / C, Green / Cycle	0.05	0.27	0.27	0.06	0.28	0.28	0.04	0.36	0.36	0.16	0.48	0.58
(v / s)_i Volume / Saturation Flow Rate	0.04	0.05	0.25	0.05	0.12	0.12	0.01	0.27	0.28	0.15	0.36	0.09
s, saturation flow rate [veh/h]	3500	3800	1900	2000	1900	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	190	1032	516	129	535	535	136	2028	676	570	2734	1103
d1, Uniform Delay [s]	51.09	30.64	38.92	50.94	32.22	32.14	51.42	31.29	31.63	45.20	23.27	10.59
k, delay calibration	0.11	0.11	0.27	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.03	0.08	15.10	13.27	0.53	0.51	1.14	2.72	8.69	5.46	1.94	0.28
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.67	0.17	0.92	0.84	0.42	0.41	0.29	0.76	0.78	0.90	0.75	0.15
d, Delay for Lane Group [s/veh]	55.12	30.71	54.02	64.21	32.75	32.65	52.55	34.01	40.32	50.65	25.21	10.87
Lane Group LOS	E	C	D	E	C	C	D	C	D	D	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.82	1.81	14.40	1.71	4.95	4.84	0.54	12.32	13.90	7.26	14.37	1.85
50th-Percentile Queue Length [ft/ln]	45.55	45.23	359.93	42.65	123.66	120.96	13.61	307.89	347.57	181.46	359.32	46.16
95th-Percentile Queue Length [veh/ln]	3.28	3.26	20.62	3.07	8.59	8.45	0.98	18.07	20.02	11.68	20.59	3.32
95th-Percentile Queue Length [ft/ln]	81.99	81.42	515.50	76.77	214.85	211.15	24.49	451.77	500.44	291.92	514.76	83.09

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	55.12	30.71	54.02	64.21	32.70	32.65	52.55	35.08	40.32	50.65	25.21	10.87
Movement LOS	E	C	D	E	C	C	D	D	D	D	C	B
d_A, Approach Delay [s/veh]	48.89			38.84			35.94			29.15		
Approach LOS	D			D			D			C		
d_I, Intersection Delay [s/veh]	34.83											
Intersection LOS	C											
Intersection V/C	0.851											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	44.58	44.58	44.58	44.58
l_p,int, Pedestrian LOS Score for Intersection	2.871	2.614	3.326	3.479
Crosswalk LOS	C	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	672	636	582	781
d_b, Bicycle Delay [s]	24.25	25.59	27.68	20.43
l_b,int, Bicycle LOS Score for Intersection	2.201	2.017	2.428	3.058
Bicycle LOS	B	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 15: SR-57 SB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	16.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.669

Intersection Setup

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	0	0	0	611	0	512	0	1539	726	0	1965	202
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	611	0	512	0	1539	726	0	1965	202
Peak Hour Factor	1.0000	1.0000	1.0000	0.8810	1.0000	0.8810	1.0000	0.9270	0.9270	1.0000	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	173	0	145	0	415	196	0	523	54
Total Analysis Volume [veh/h]	0	0	0	694	0	581	0	1660	783	0	2090	215
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	7	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	6	0	0	0	6	0	0	6	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	64	0	0	0	26	0	0	26	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	15	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	C
C, Cycle Length [s]		90	90	90	90	90
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		26	26	26	56	56
g / C, Green / Cycle		0.29	0.29	0.29	0.62	0.62
(v / s)_i Volume / Saturation Flow Rate		0.24	0.24	0.22	0.29	0.37
s, saturation flow rate [veh/h]		1750	1750	1900	5700	5700
c, Capacity [veh/h]		509	509	553	3535	3535
d1, Uniform Delay [s]		29.83	29.83	29.10	9.14	10.23
k, delay calibration		0.11	0.11	0.11	0.50	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		3.69	3.69	2.29	0.45	0.73
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.84	0.84	0.77	0.47	0.59
d, Delay for Lane Group [s/veh]		33.52	33.52	31.39	9.59	10.97
Lane Group LOS		C	C	C	A	B
Critical Lane Group		Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]		8.84	8.84	8.46	5.31	7.52
50th-Percentile Queue Length [ft/ln]		220.91	220.91	211.55	132.82	187.96
95th-Percentile Queue Length [veh/ln]		13.71	13.71	13.23	9.09	12.02
95th-Percentile Queue Length [ft/ln]		342.78	342.78	330.81	227.32	300.38

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	33.52	0.00	31.96	0.00	9.59	0.00	0.00	10.97	0.00
Movement LOS				C		C		A			B	
d_A, Approach Delay [s/veh]	0.00			32.81			9.59			10.97		
Approach LOS	A			C			A			B		
d_I, Intersection Delay [s/veh]	16.06											
Intersection LOS	B											
Intersection V/C	0.669											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	34.63	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	2.441	0.000	0.000
Crosswalk LOS	F	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1335	489	489
d_b, Bicycle Delay [s]	44.96	4.98	25.65	25.65
l_b,int, Bicycle LOS Score for Intersection	4.132	3.663	2.473	2.709
Bicycle LOS	D	D	B	B

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 16: SR-57 NB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	22.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.687

Intersection Setup

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	1020	31	850	0	0	86	98	1432	562	0	1552	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1020	31	850	0	0	86	98	1432	562	0	1552	14
Peak Hour Factor	0.9080	0.9080	0.9080	1.0000	1.0000	0.6820	0.8790	0.8790	0.8790	1.0000	0.8940	0.8940
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	281	9	234	0	0	32	28	407	160	0	434	4
Total Analysis Volume [veh/h]	1123	34	936	0	0	126	111	1629	639	0	1736	16
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Overlap	Protecte	Permiss	Unsigna	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	0	5	5	2	0	0	6	0
Auxiliary Signal Groups						5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	6	0	0	0	6	6	6	0	0	6	0
Maximum Green [s]	0	30	0	0	0	30	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	1.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	48	0	0	0	11	11	42	0	0	31	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	22	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No				No		No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No				No	No	No			No	
Maximum Recall		No				No	No	No			No	
Pedestrian Recall		No				No	No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	R	L	C	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	34	34	34	7	7	48	37	37
g / C, Green / Cycle	0.37	0.37	0.37	0.08	0.08	0.54	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.29	0.30	0.28	0.03	0.06	0.29	0.23	0.23
s, saturation flow rate [veh/h]	3500	1750	1900	3800	1800	5700	5700	1900
c, Capacity [veh/h]	1310	655	711	298	141	3061	2360	787
d1, Uniform Delay [s]	24.99	25.31	24.47	39.54	40.74	13.52	20.09	20.09
k, delay calibration	0.11	0.18	0.14	0.11	0.11	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.09	4.08	2.12	0.95	9.20	0.67	0.95	2.83
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.81	0.75	0.42	0.79	0.53	0.56	0.56
d, Delay for Lane Group [s/veh]	26.08	29.39	26.59	40.49	49.95	14.18	21.05	22.93
Lane Group LOS	C	C	C	D	D	B	C	C
Critical Lane Group	No	Yes	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	9.53	10.47	9.83	1.35	2.75	6.80	6.90	7.31
50th-Percentile Queue Length [ft/ln]	238.23	261.86	245.69	33.84	68.68	169.95	172.51	182.78
95th-Percentile Queue Length [veh/ln]	14.59	15.78	14.97	2.44	4.95	11.07	11.21	11.75
95th-Percentile Queue Length [ft/ln]	364.79	394.55	374.22	60.91	123.63	276.84	280.21	293.64

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	26.31	29.39	27.83	0.00	0.00	40.49	49.95	14.18	0.00	0.00	21.50	22.93
Movement LOS	C	C	C			D	D	B			C	C
d_A, Approach Delay [s/veh]	27.05			40.49			16.47			21.52		
Approach LOS	C			D			B			C		
d_I, Intersection Delay [s/veh]	22.42											
Intersection LOS	C											
Intersection V/C	0.687											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.708	2.033	0.000	0.000
Crosswalk LOS	B	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	978	156	844	600
d_b, Bicycle Delay [s]	11.76	38.28	15.03	22.06
l_b,int, Bicycle LOS Score for Intersection	5.013	1.560	2.517	2.282
Bicycle LOS	F	A	B	B

Sequence

Ring 1	-	2	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 17: Associated Road at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	32.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.805

Intersection Setup

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	151	211	73	170	335	166	216	1936	102	93	1673	102
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	151	211	73	170	335	166	216	1936	102	93	1673	102
Peak Hour Factor	0.8870	0.8870	0.8870	0.9320	0.9320	0.9320	0.9120	0.9120	0.9120	0.9620	0.9620	0.9620
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	43	59	21	46	90	45	59	531	28	24	435	27
Total Analysis Volume [veh/h]	170	238	82	182	359	178	237	2123	112	97	1739	106
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	39	0	12	40	0	22	53	0	11	42	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	28	0	0	29	0	0	26	0	0	25	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	115	115	115	115	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	23	23	8	24	24	17	61	61	7	51	51
g / C, Green / Cycle	0.06	0.20	0.20	0.07	0.21	0.21	0.15	0.53	0.53	0.06	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.05	0.09	0.08	0.05	0.19	0.09	0.13	0.39	0.40	0.05	0.24	0.25
s, saturation flow rate [veh/h]	3500	1900	1900	3500	1900	1900	1800	3800	1900	1800	5700	1900
c, Capacity [veh/h]	216	388	388	242	402	402	266	2000	1000	111	2509	836
d1, Uniform Delay [s]	53.26	39.94	39.69	52.61	44.12	39.48	48.13	21.07	21.57	53.56	23.70	24.16
k, delay calibration	0.11	0.11	0.11	0.11	0.17	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.30	0.75	0.66	4.71	10.33	0.77	9.96	2.46	5.51	18.45	0.85	2.88
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.43	0.40	0.75	0.89	0.44	0.89	0.74	0.76	0.87	0.54	0.58
d, Delay for Lane Group [s/veh]	59.56	40.68	40.35	57.32	54.45	40.25	58.09	23.53	27.08	72.01	24.55	27.04
Lane Group LOS	E	D	D	E	D	D	E	C	C	E	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.61	4.17	3.87	2.74	11.03	4.47	7.38	15.37	17.12	3.35	9.15	10.34
50th-Percentile Queue Length [ft/ln]	65.28	104.21	96.66	68.45	275.81	111.73	184.60	384.33	427.89	83.71	228.65	258.47
95th-Percentile Queue Length [veh/ln]	4.70	7.50	6.96	4.93	16.48	7.94	11.84	21.80	23.90	6.03	14.11	15.61
95th-Percentile Queue Length [ft/ln]	117.50	187.58	173.98	123.21	411.99	198.40	296.01	545.09	597.52	150.67	352.65	390.30

Movement, Approach, & Intersection Results

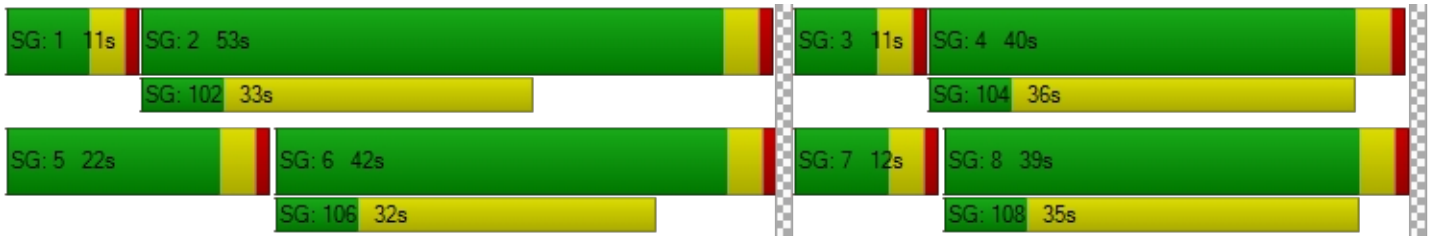
d_M, Delay for Movement [s/veh]	59.56	40.58	40.35	57.32	54.45	40.25	58.09	24.62	27.08	72.01	25.09	27.04
Movement LOS	E	D	D	E	D	D	E	C	C	E	C	C
d_A, Approach Delay [s/veh]	47.13			51.66			27.94			27.54		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	32.51											
Intersection LOS	C											
Intersection V/C	0.805											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	47.05	47.05	47.05	47.05
l_p,int, Pedestrian LOS Score for Intersection	2.518	2.676	3.293	3.265
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	608	626	852	661
d_b, Bicycle Delay [s]	27.84	27.15	18.96	25.80
l_b,int, Bicycle LOS Score for Intersection	1.964	2.746	2.919	2.361
Bicycle LOS	A	B	C	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 18: Castlegate Lane/Placentia Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	19.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.719

Intersection Setup

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	177	12	149	25	28	15	14	1914	364	178	1550	33
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	177	12	149	25	28	15	14	1914	364	178	1550	33
Peak Hour Factor	0.8320	0.8320	0.8320	0.6740	0.6740	0.6740	0.9510	0.9510	0.9510	0.8930	0.8930	0.8930
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	53	4	45	9	10	6	4	503	96	50	434	9
Total Analysis Volume [veh/h]	213	14	179	37	42	22	15	2013	383	199	1736	37
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	26	0	0	10	0	10	32	0	22	44	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	15	0	0	0	0	0	21	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	11	11	6	6	2	45	45	12	55	55
g / C, Green / Cycle	0.12	0.12	0.12	0.06	0.06	0.02	0.50	0.50	0.13	0.62	0.62
(v / s)_i Volume / Saturation Flow Rate	0.06	0.07	0.09	0.02	0.03	0.01	0.35	0.20	0.11	0.31	0.32
s, saturation flow rate [veh/h]	1750	1750	1900	1800	1900	1800	5700	1900	1800	3800	1900
c, Capacity [veh/h]	216	216	235	112	119	40	2871	957	239	2335	1167
d1, Uniform Delay [s]	37.04	37.05	38.25	40.47	41.02	43.47	17.17	13.91	38.11	9.67	9.85
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.96	1.98	5.09	1.69	3.77	5.69	1.46	1.25	7.30	0.77	1.66
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.52	0.53	0.76	0.33	0.54	0.37	0.70	0.40	0.83	0.50	0.52
d, Delay for Lane Group [s/veh]	39.00	39.04	43.34	42.16	44.79	49.16	18.63	15.16	45.40	10.44	11.51
Lane Group LOS	D	D	D	D	D	D	B	B	D	B	B
Critical Lane Group	No	No	Yes	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.42	2.44	4.10	0.83	1.49	0.39	10.25	4.89	4.70	5.91	6.54
50th-Percentile Queue Length [ft/ln]	60.60	60.98	102.46	20.77	37.20	9.75	256.18	122.29	117.44	147.80	163.45
95th-Percentile Queue Length [veh/ln]	4.36	4.39	7.38	1.50	2.68	0.70	15.50	8.52	8.25	9.90	10.73
95th-Percentile Queue Length [ft/ln]	109.07	109.77	184.42	37.38	66.96	17.55	387.42	212.97	206.30	247.49	268.29

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	39.02	39.04	43.34	42.16	44.79	44.79	49.16	18.63	15.16	45.40	10.79	11.51
Movement LOS	D	D	D	D	D	D	D	B	B	D	B	B
d_A, Approach Delay [s/veh]	40.92			43.82			18.27			14.30		
Approach LOS	D			D			B			B		
d_I, Intersection Delay [s/veh]	19.08											
Intersection LOS	B											
Intersection V/C	0.719											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.72	34.72	0.00	34.72
l_p,int, Pedestrian LOS Score for Intersection	2.382	1.994	0.000	3.179
Crosswalk LOS	B	A	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	488	133	622	888
d_b, Bicycle Delay [s]	25.73	39.24	21.40	13.92
l_b,int, Bicycle LOS Score for Intersection	2.230	1.726	2.886	2.644
Bicycle LOS	B	A	C	B

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Brea Mall Expansion, Brea

Vistro File: N:\...\4099 HCM Network.vistro
Report File: N:\...\PM 2026.pdf

Scenario 5 PM 2026
4/12/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State College Boulevard at Lambert Road	Signalized	HCM 6th Edition	NB Left	0.881	42.1	D
2	SR-57 SB Ramps at Lambert Road	Signalized	HCM 6th Edition	WB Left	0.707	19.8	B
3	SR-57 NB Ramps at Lambert Road	Signalized	HCM 6th Edition	NB Left	0.660	15.0	B
4	Randolph Avenue at Birch Street	Signalized	HCM 6th Edition	NB Left	0.546	30.7	C
5	State College Boulevard at Birch Street	Signalized	HCM 6th Edition	NB Left	0.838	35.5	D
6	S Associated Road at Birch Street	Signalized	HCM 6th Edition	EB Left	0.703	28.2	C
7	Randolph Avenue at Madison Way	Signalized	HCM 6th Edition	WB Left	0.197	18.8	B
8	Randolph Avenue at Brea Mall	Signalized	HCM 6th Edition	EB Left	0.355	18.4	B
9	Brea Mall South at State College Boulevard	Signalized	HCM 6th Edition	WB Left	0.636	30.3	C
10	Harbor Boulevard at Imperial Highway	Signalized	HCM 6th Edition	NB Left	0.922	47.2	D
11	Puente Street at Imperial Highway	Signalized	HCM 6th Edition	WB Left	0.691	19.0	B
12	Brea Boulevard at Imperial Highway	Signalized	HCM 6th Edition	EB Left	0.878	41.6	D
13	Randolph Avenue at Imperial Highway	Signalized	HCM 6th Edition	WB Left	0.763	25.8	C
14	State College Boulevard at Imperial Highway	Signalized	HCM 6th Edition	SB Left	1.047	62.6	E
15	SR-57 SB Ramps at Imperial Highway	Signalized	HCM 6th Edition	SB Left	0.754	16.9	B
16	SR-57 NB Ramps at Imperial Highway	Signalized	HCM 6th Edition	EB Left	0.785	22.9	C
17	Associated Road at Imperial Highway	Signalized	HCM 6th Edition	SB Left	0.913	46.2	D
18	Castlegate Lane/Placentia	Signalized	HCM 6th	EB Left	0.835	26.7	C

16	Avenue at Imperial Highway	Signalized	Edition	EB Left	0.855	26.7	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: State College Boulevard at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	42.1
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.881

Intersection Setup

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	326	615	319	587	411	16	40	1506	269	409	1200	741
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	326	615	319	587	411	16	40	1506	269	409	1200	741
Peak Hour Factor	0.9470	0.9470	0.9470	0.9220	0.9220	0.9220	0.8360	0.8360	0.8360	0.9740	0.9740	0.9740
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	86	162	84	159	111	4	12	450	80	105	308	190
Total Analysis Volume [veh/h]	344	649	337	637	446	17	48	1801	322	420	1232	761
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	17	32	0	29	44	0	10	39	0	20	49	49
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	0	0	0	33	0	0	28	0	0	22	22
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	13	25	25	25	25	37	37	5	38	38	16	50	79
g / C, Green / Cycle	0.11	0.21	0.21	0.21	0.21	0.30	0.30	0.04	0.32	0.32	0.13	0.41	0.65
(v / s)_i Volume / Saturation Flow Rate	0.10	0.18	0.18	0.16	0.18	0.12	0.12	0.01	0.28	0.28	0.12	0.22	0.40
s, saturation flow rate [veh/h]	3500	1900	1900	1900	3500	1900	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	381	390	390	390	729	579	579	143	1821	607	468	2351	1243
d1, Uniform Delay [s]	52.87	46.36	46.19	45.03	45.99	33.07	33.01	56.01	38.60	38.53	51.19	26.44	11.98
k, delay calibration	0.11	0.25	0.24	0.18	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.04	14.24	12.58	5.29	3.47	0.45	0.44	1.38	6.25	15.82	6.39	0.84	2.26
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.90	0.89	0.87	0.77	0.87	0.40	0.40	0.34	0.88	0.87	0.90	0.52	0.61
d, Delay for Lane Group [s/veh]	60.91	60.60	58.77	50.33	49.46	33.52	33.46	57.38	44.85	54.35	57.58	27.28	14.24
Lane Group LOS	E	E	E	D	D	C	C	E	D	D	E	C	B
Critical Lane Group	No	Yes	No	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.54	11.53	11.15	8.99	9.51	5.46	5.38	0.74	15.66	17.18	6.62	8.93	11.74
50th-Percentile Queue Length [ft/ln]	138.6	288.1	278.7	224.7	237.63	136.52	134.54	18.39	391.39	429.60	165.52	223.18	293.47
95th-Percentile Queue Length [veh/ln]	9.41	17.10	16.63	13.90	14.56	9.29	9.19	1.32	22.14	23.98	10.84	13.83	17.36
95th-Percentile Queue Length [ft/ln]	235.1	427.3	415.6	347.6	364.04	232.33	229.66	33.11	553.62	599.57	271.02	345.69	433.94

Movement, Approach, & Intersection Results

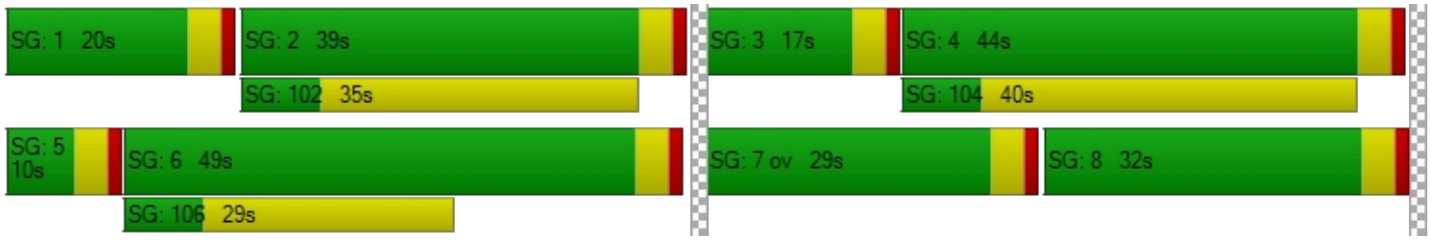
d_M, Delay for Movement [s/veh]	60.91	59.75	50.56	49.46	33.49	33.46	57.38	45.94	54.35	57.58	27.28	14.24
Movement LOS	E	E	D	D	C	C	E	D	D	E	C	B
d_A, Approach Delay [s/veh]	57.90			42.74			47.44			28.44		
Approach LOS	E			D			D			C		
d_I, Intersection Delay [s/veh]	42.15											
Intersection LOS	D											
Intersection V/C	0.881											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.52	49.52	49.52	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.958	2.882	3.271	0.000
Crosswalk LOS	C	C	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	467	666	583	750
d_b, Bicycle Delay [s]	35.28	26.68	30.12	23.45
l_b,int, Bicycle LOS Score for Intersection	2.657	2.467	2.455	2.887
Bicycle LOS	B	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: SR-57 SB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	19.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.707

Intersection Setup

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	0	0	0	470	0	870	0	1477	857	257	1789	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	470	0	870	0	1477	857	257	1789	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9480	1.0000	0.9480	1.0000	0.8820	0.8820	0.9530	0.9530	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	124	0	229	0	419	243	67	469	0
Total Analysis Volume [veh/h]	0	0	0	496	0	918	0	1675	972	270	1877	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	7	0	0	0	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	6	0	0	0	6	0	6	6	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	42	0	0	0	35	0	13	48	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	12	0	0	20	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall				No				No		No	No	
Maximum Recall				No				No		No	No	
Pedestrian Recall				No				No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	R	C	R	L	C
C, Cycle Length [s]		90	90	90	90	90	90
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		27	27	42	42	9	55
g / C, Green / Cycle		0.30	0.30	0.47	0.47	0.10	0.61
(v / s)_i Volume / Saturation Flow Rate		0.14	0.24	0.29	0.26	0.08	0.33
s, saturation flow rate [veh/h]		3500	3800	5700	3800	3500	5700
c, Capacity [veh/h]		1048	1137	2673	1782	345	3488
d1, Uniform Delay [s]		25.75	29.15	17.98	17.06	39.65	10.11
k, delay calibration		0.11	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.33	1.41	1.12	1.20	3.93	0.60
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.47	0.81	0.63	0.55	0.78	0.54
d, Delay for Lane Group [s/veh]		26.09	30.55	19.10	18.26	43.58	10.71
Lane Group LOS		C	C	B	B	D	B
Critical Lane Group		No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]		4.28	9.08	8.49	7.08	3.07	6.55
50th-Percentile Queue Length [ft/ln]		106.98	227.09	212.18	176.97	76.64	163.87
95th-Percentile Queue Length [veh/ln]		7.67	14.03	13.27	11.44	5.52	10.75
95th-Percentile Queue Length [ft/ln]		191.79	350.65	331.63	286.05	137.94	268.84

Movement, Approach, & Intersection Results

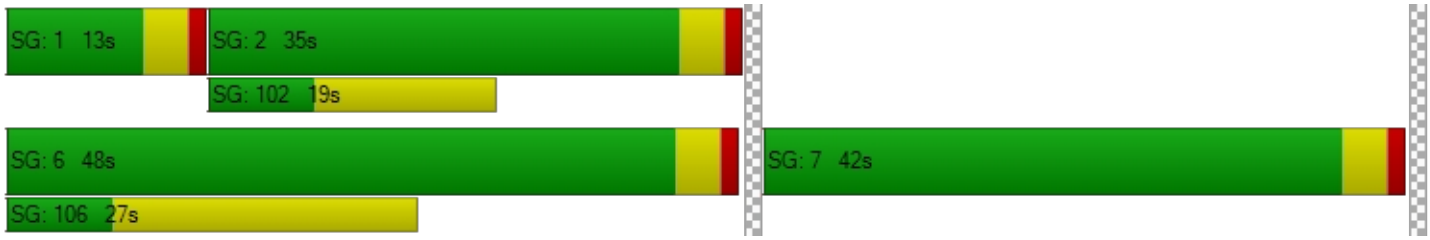
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	26.09	0.00	30.55	0.00	19.10	18.26	43.58	10.71	0.00
Movement LOS				C		C		B	B	D	B	
d_A, Approach Delay [s/veh]	0.00			28.99			18.79			14.85		
Approach LOS	A			C			B			B		
d_I, Intersection Delay [s/veh]	19.75											
Intersection LOS	B											
Intersection V/C	0.707											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.320	2.475	0.000	0.000
Crosswalk LOS	B	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	844	689	978
d_b, Bicycle Delay [s]	45.01	15.03	19.35	11.76
l_b,int, Bicycle LOS Score for Intersection	4.132	1.560	3.015	2.740
Bicycle LOS	D	A	C	B

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: SR-57 NB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	15.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.660

Intersection Setup

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			No			No			No		

Volumes

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	693	0	301	0	0	0	0	1572	586	0	1170	539
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	693	0	301	0	0	0	0	1572	586	0	1170	539
Peak Hour Factor	0.8400	1.0000	0.8400	1.0000	1.0000	1.0000	0.9710	0.8440	0.8440	1.0000	0.9530	0.9530
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	206	0	90	0	0	0	0	466	174	0	307	0
Total Analysis Volume [veh/h]	825	0	358	0	0	0	0	1863	694	0	1228	0
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Permiss	Split	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna
Signal Group	3	0	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	0	0	0	0	0	0	6	0	0	6	0
Maximum Green [s]	30	0	0	0	0	0	0	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	54	0	0	0	0	0	0	36	0	0	36	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	25	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R		C	C	R	C
C, Cycle Length [s]	90	90		90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	26	26		56	56	56	56
g / C, Green / Cycle	0.29	0.29		0.63	0.63	0.63	0.63
(v / s)_i Volume / Saturation Flow Rate	0.24	0.19		0.34	0.34	0.34	0.22
s, saturation flow rate [veh/h]	3500	1900		3800	1900	1900	5700
c, Capacity [veh/h]	998	542		2378	1189	1189	3567
d1, Uniform Delay [s]	30.03	28.28		9.48	9.48	9.48	8.01
k, delay calibration	0.11	0.11		0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.82	1.39		0.88	1.75	1.75	0.26
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.83	0.66		0.54	0.54	0.54	0.34
d, Delay for Lane Group [s/veh]	31.85	29.67		10.35	11.22	11.22	8.28
Lane Group LOS	C	C		B	B	B	A
Critical Lane Group	Yes	No		Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	8.32	6.81		6.52	6.81	6.81	3.46
50th-Percentile Queue Length [ft/ln]	208.12	170.16		163.12	170.30	170.30	86.61
95th-Percentile Queue Length [veh/ln]	13.06	11.09		10.71	11.09	11.09	6.24
95th-Percentile Queue Length [ft/ln]	326.41	277.13		267.85	277.31	277.31	155.90

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	31.85	0.00	29.67	0.00	0.00	0.00	0.00	10.43	11.22	0.00	8.28	0.00
Movement LOS	C		C					B	B		A	
d_A, Approach Delay [s/veh]	31.19			0.00			10.79			8.28		
Approach LOS	C			A			B			A		
d_I, Intersection Delay [s/veh]	15.03											
Intersection LOS	B											
Intersection V/C	0.660											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.63	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.665	0.000	0.000	0.000
Crosswalk LOS	B	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1112	0	712	712
d_b, Bicycle Delay [s]	8.86	44.96	18.65	18.65
l_b,int, Bicycle LOS Score for Intersection	1.560	4.132	2.966	2.235
Bicycle LOS	A	D	C	B

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 4: Randolph Avenue at Birch Street

Control Type:	Signalized	Delay (sec / veh):	30.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.546

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Base Volume Input [veh/h]	136	58	174	52	50	110	80	730	98	196	1154	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	136	58	174	52	50	110	80	730	98	196	1154	40
Peak Hour Factor	0.8740	0.8740	0.8740	0.7860	0.7860	0.7860	0.9250	0.9250	0.9250	0.9540	0.9540	0.9540
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	17	50	17	16	35	22	197	26	51	302	10
Total Analysis Volume [veh/h]	156	66	199	66	64	140	86	789	106	205	1210	42
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	40	0	0	40	0	21	30	0	20	29	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	25	0	0	19	0	0	18	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	12	12	12	12	6	54	54	12	60	60
g / C, Green / Cycle	0.13	0.13	0.13	0.13	0.13	0.06	0.60	0.60	0.14	0.67	0.67
(v / s)_i Volume / Saturation Flow Rate	0.09	0.03	0.10	0.04	0.11	0.05	0.24	0.23	0.11	0.32	0.02
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1800	1900	1900	1800	3800	1900
c, Capacity [veh/h]	105	255	255	234	255	115	1134	1134	244	2540	1270
d1, Uniform Delay [s]	35.84	34.96	37.69	35.03	37.81	41.44	9.65	9.52	37.98	7.27	5.07
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	227.70	0.53	5.10	0.65	5.68	9.17	1.07	1.00	7.55	0.64	0.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.48	0.26	0.78	0.28	0.80	0.75	0.40	0.39	0.84	0.48	0.03
d, Delay for Lane Group [s/veh]	263.54	35.49	42.80	35.68	43.48	50.61	10.71	10.52	45.53	7.92	5.12
Lane Group LOS	F	D	D	D	D	D	B	B	D	A	A
Critical Lane Group	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	8.76	1.32	4.54	1.33	4.69	2.15	4.65	4.40	4.85	5.00	0.25
50th-Percentile Queue Length [ft/ln]	218.94	33.04	113.40	33.22	117.36	53.74	116.34	110.04	121.24	125.01	6.20
95th-Percentile Queue Length [veh/ln]	15.50	2.38	8.03	2.39	8.25	3.87	8.19	7.84	8.46	8.67	0.45
95th-Percentile Queue Length [ft/ln]	387.40	59.47	200.73	59.80	206.19	96.74	204.78	196.05	211.53	216.69	11.16

Movement, Approach, & Intersection Results

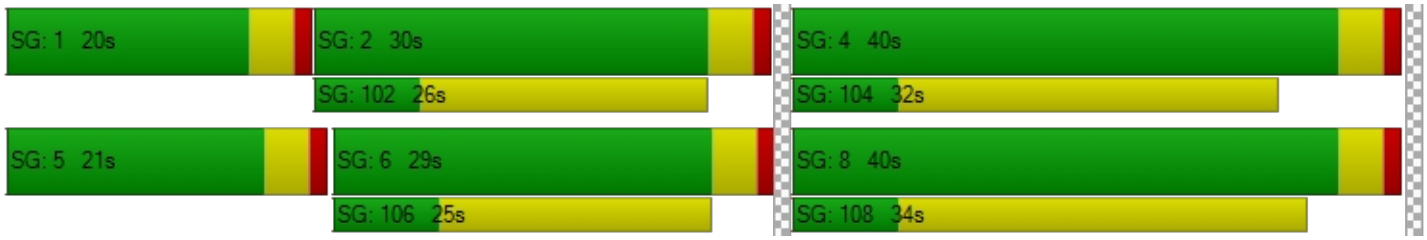
d_M, Delay for Movement [s/veh]	263.54	35.49	42.80	35.68	43.48	43.48	50.61	10.63	10.52	45.53	7.92	5.12
Movement LOS	F	D	D	D	D	D	D	B	B	D	A	A
d_A, Approach Delay [s/veh]	123.45			41.57			14.13			13.13		
Approach LOS	F			D			B			B		
d_I, Intersection Delay [s/veh]	30.74											
Intersection LOS	C											
Intersection V/C	0.546											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.70	34.70	34.70	34.70
l_p,int, Pedestrian LOS Score for Intersection	2.325	2.091	3.006	2.954
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	800	800	577	555
d_b, Bicycle Delay [s]	16.22	16.22	22.78	23.49
l_b,int, Bicycle LOS Score for Intersection	2.254	2.005	2.369	2.762
Bicycle LOS	B	B	B	C

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: State College Boulevard at Birch Street

Control Type:	Signalized	Delay (sec / veh):	35.5
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.838

Intersection Setup

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Base Volume Input [veh/h]	148	426	162	351	378	328	293	800	162	147	1023	673
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	148	426	162	351	378	328	293	800	162	147	1023	673
Peak Hour Factor	0.9210	0.9210	0.9210	0.9620	0.9620	0.9620	0.9110	0.9110	0.9110	0.9550	0.9550	0.9550
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	40	116	44	91	98	85	80	220	44	38	268	176
Total Analysis Volume [veh/h]	161	463	176	365	393	341	322	878	178	154	1071	705
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	10	39	0	18	47	0	16	42	0	11	37	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	28	0	0	30	0	0	28	0	0	26	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	19	19	13	26	26	12	55	55	7	50	50
g / C, Green / Cycle	0.05	0.17	0.17	0.12	0.23	0.23	0.11	0.50	0.50	0.06	0.46	0.46
(v / s)_i Volume / Saturation Flow Rate	0.05	0.12	0.09	0.10	0.21	0.18	0.09	0.23	0.09	0.04	0.28	0.37
s, saturation flow rate [veh/h]	3500	3800	1900	3500	1900	1900	3500	3800	1900	3500	3800	1900
c, Capacity [veh/h]	194	640	320	427	447	447	382	1909	955	216	1729	864
d1, Uniform Delay [s]	51.49	43.34	41.94	47.38	40.60	39.24	48.11	17.73	15.04	50.69	22.78	26.01
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.85	1.57	1.47	4.97	6.05	2.73	5.07	0.80	0.43	4.32	1.68	8.37
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.83	0.72	0.55	0.85	0.88	0.76	0.84	0.46	0.19	0.71	0.62	0.82
d, Delay for Lane Group [s/veh]	60.34	44.90	43.42	52.35	46.64	41.97	53.18	18.53	15.47	55.01	24.46	34.38
Lane Group LOS	E	D	D	D	D	D	D	B	B	E	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.43	6.08	4.50	5.18	10.91	8.86	4.59	7.23	2.53	2.21	10.66	17.42
50th-Percentile Queue Length [ft/ln]	60.81	152.05	112.59	129.44	272.73	221.49	114.70	180.83	63.25	55.21	266.44	435.62
95th-Percentile Queue Length [veh/ln]	4.38	10.13	7.98	8.91	16.33	13.74	8.10	11.64	4.55	3.98	16.01	24.27
95th-Percentile Queue Length [ft/ln]	109.46	253.17	199.60	222.74	408.15	343.53	202.52	291.10	113.84	99.38	400.29	606.77

Movement, Approach, & Intersection Results

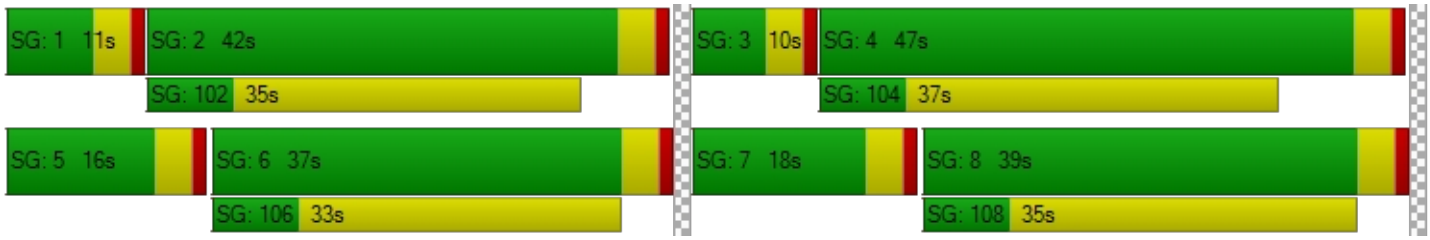
d_M, Delay for Movement [s/veh]	60.34	44.90	43.42	52.35	46.64	41.97	53.18	18.53	15.47	55.01	24.46	34.38
Movement LOS	E	D	D	D	D	D	D	B	B	E	C	C
d_A, Approach Delay [s/veh]	47.68			47.09			26.23			30.52		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	35.52											
Intersection LOS	D											
Intersection V/C	0.838											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	44.58	44.58	44.58	44.58
l_p,int, Pedestrian LOS Score for Intersection	2.816	2.883	3.015	3.070
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	636	781	691	600
d_b, Bicycle Delay [s]	25.59	20.43	23.59	26.97
l_b,int, Bicycle LOS Score for Intersection	2.220	2.466	2.696	3.152
Bicycle LOS	B	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: S Associated Road at Birch Street

Control Type:	Signalized	Delay (sec / veh):	28.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.703

Intersection Setup

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Base Volume Input [veh/h]	500	33	355	11	20	9	16	931	314	295	1318	18
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	500	33	355	11	20	9	16	931	314	295	1318	18
Peak Hour Factor	0.9370	0.9370	0.9370	0.8500	0.8500	0.8500	0.9910	0.9910	0.9910	0.9420	0.9420	0.9420
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	133	9	95	3	6	3	4	235	79	78	350	5
Total Analysis Volume [veh/h]	534	35	379	13	24	11	16	939	317	313	1399	19
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	8	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups			1,8									
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	6	0	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	30	0	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	23	60	60	0	37	0	10	44	0	16	50	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	26	26	0	26	0	0	27	0	0	26	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No		No		No	No		No	No	
Maximum Recall	No	No	No		No		No	No		No	No	
Pedestrian Recall	No	No	No		No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	19	28	44	5	5	3	68	68	12	78	78
g / C, Green / Cycle	0.16	0.23	0.37	0.04	0.04	0.02	0.57	0.57	0.10	0.65	0.65
(v / s)_i Volume / Saturation Flow Rate	0.15	0.02	0.20	0.01	0.02	0.01	0.34	0.32	0.09	0.37	0.37
s, saturation flow rate [veh/h]	3500	1900	1900	1800	1900	1800	1900	1900	3500	1900	1900
c, Capacity [veh/h]	555	442	696	83	77	39	1077	1077	352	1227	1227
d1, Uniform Delay [s]	50.15	36.01	30.09	55.64	56.27	57.98	17.17	16.50	53.34	12.02	12.01
k, delay calibration	0.11	0.11	0.30	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.84	0.08	1.85	0.87	4.07	6.81	2.54	2.10	7.71	1.99	1.98
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.96	0.08	0.54	0.16	0.45	0.41	0.61	0.56	0.89	0.58	0.58
d, Delay for Lane Group [s/veh]	60.99	36.08	31.94	56.51	60.35	64.79	19.71	18.60	61.04	14.02	13.99
Lane Group LOS	E	D	C	E	E	E	B	B	E	B	B
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	8.77	0.82	9.01	0.40	1.13	0.55	12.24	10.81	5.04	10.75	10.72
50th-Percentile Queue Length [ft/ln]	219.19	20.48	225.13	10.03	28.14	13.85	306.07	270.18	125.92	268.83	268.01
95th-Percentile Queue Length [veh/ln]	13.62	1.47	13.93	0.72	2.03	1.00	17.98	16.20	8.72	16.13	16.09
95th-Percentile Queue Length [ft/ln]	340.59	36.87	348.16	18.06	50.66	24.93	449.53	404.97	217.94	403.28	402.26

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	60.99	36.08	31.94	56.51	60.35	60.35	64.79	19.37	18.60	61.04	14.01	13.99
Movement LOS	E	D	C	E	E	E	E	B	B	E	B	B
d_A, Approach Delay [s/veh]	48.46			59.31			19.75			22.51		
Approach LOS	D			E			B			C		
d_I, Intersection Delay [s/veh]	28.23											
Intersection LOS	C											
Intersection V/C	0.703											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.52	49.52	49.52	49.52
l_p,int, Pedestrian LOS Score for Intersection	2.727	1.992	2.941	2.983
Crosswalk LOS	B	A	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	933	550	666	766
d_b, Bicycle Delay [s]	17.08	31.55	26.68	22.83
l_b,int, Bicycle LOS Score for Intersection	3.124	1.639	2.609	2.988
Bicycle LOS	C	A	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 7: Randolph Avenue at Madison Way

Control Type:	Signalized	Delay (sec / veh):	18.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.197

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Base Volume Input [veh/h]	48	325	43	28	260	30	65	4	52	75	4	38
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	48	325	43	28	260	30	65	4	52	75	4	38
Peak Hour Factor	0.9560	0.9560	0.9560	0.9590	0.9590	0.9590	0.6990	0.6990	0.6990	0.8710	0.8710	0.8710
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	85	11	7	68	8	23	1	19	22	1	11
Total Analysis Volume [veh/h]	50	340	45	29	271	31	93	6	74	86	5	44
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	6	6	0	6	6	0	0	6	0	0	6	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	26	0	10	25	0	0	54	0	0	54	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	15	0	0	12	0	0	19	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	68	68	3	67	67	7	7	7	7
g / C, Green / Cycle	0.05	0.76	0.76	0.04	0.74	0.74	0.08	0.08	0.08	0.08
(v / s)_i Volume / Saturation Flow Rate	0.03	0.10	0.10	0.02	0.08	0.08	0.05	0.04	0.05	0.03
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1900	1800	1900	1800	1900
c, Capacity [veh/h]	88	1435	1435	64	1410	1410	139	145	111	145
d1, Uniform Delay [s]	41.91	3.01	3.00	42.56	3.26	3.26	40.53	40.12	40.36	39.45
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.70	0.20	0.19	4.91	0.15	0.15	5.42	3.28	11.02	1.37
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.57	0.14	0.13	0.45	0.11	0.11	0.67	0.55	0.78	0.34
d, Delay for Lane Group [s/veh]	47.61	3.21	3.19	47.47	3.42	3.41	45.94	43.40	51.38	40.82
Lane Group LOS	D	A	A	D	A	A	D	D	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	1.21	0.78	0.75	0.71	0.65	0.63	2.19	1.82	2.17	1.07
50th-Percentile Queue Length [ft/ln]	30.37	19.47	18.86	17.84	16.22	15.86	54.84	45.53	54.15	26.82
95th-Percentile Queue Length [veh/ln]	2.19	1.40	1.36	1.28	1.17	1.14	3.95	3.28	3.90	1.93
95th-Percentile Queue Length [ft/ln]	54.67	35.04	33.94	32.12	29.19	28.55	98.71	81.96	97.47	48.27

Movement, Approach, & Intersection Results

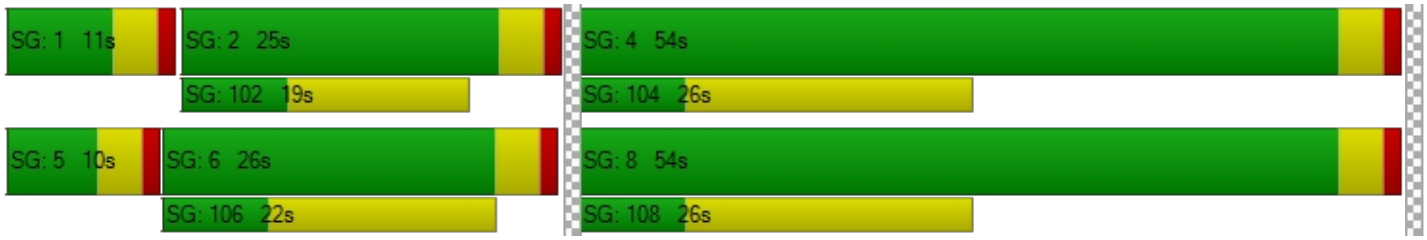
d_M, Delay for Movement [s/veh]	47.61	3.20	3.19	47.47	3.41	3.41	45.94	43.40	43.40	51.38	40.82	40.82
Movement LOS	D	A	A	D	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	8.31			7.27			44.77			47.55		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	18.79											
Intersection LOS	B											
Intersection V/C	0.197											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	34.68	34.68
l_p,int, Pedestrian LOS Score for Intersection	2.591	2.589	2.024	2.010
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	489	467	1111	1111
d_b, Bicycle Delay [s]	25.70	26.46	8.90	8.90
l_b,int, Bicycle LOS Score for Intersection	1.918	1.833	1.845	1.782
Bicycle LOS	A	A	A	A

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 8: Randolph Avenue at Brea Mall

Control Type:	Signalized	Delay (sec / veh):	18.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.355

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Base Volume Input [veh/h]	17	338	322	37	373	20	18	3	12	274	3	47
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	338	322	37	373	20	18	3	12	274	3	47
Peak Hour Factor	0.9560	0.9560	0.9560	0.9310	0.9310	0.9310	0.9380	0.9380	0.9380	0.8620	0.8620	0.8620
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	88	84	10	100	5	5	1	3	79	1	14
Total Analysis Volume [veh/h]	18	354	337	40	401	21	19	3	13	318	3	55
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	6	6	0	6	6	0	0	6	0	0	6	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	29	0	10	29	0	0	30	0	0	31	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	17	0	0	18	0	0	19	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	R	L	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	71	63	63	71	65	65	4	4	13	13
g / C, Green / Cycle	0.71	0.63	0.63	0.71	0.65	0.65	0.04	0.04	0.13	0.13
(v / s)_i Volume / Saturation Flow Rate	0.01	0.19	0.18	0.02	0.11	0.11	0.01	0.01	0.11	0.10
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1900	1800	1900	1800	1900
c, Capacity [veh/h]	1297	1197	1197	1223	1228	1228	68	72	237	250
d1, Uniform Delay [s]	4.23	8.43	8.34	4.29	7.04	7.03	46.89	46.63	42.22	41.80
k, delay calibration	0.11	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.00	0.63	0.59	0.05	0.31	0.30	2.69	1.19	6.39	4.27
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.01	0.30	0.28	0.03	0.17	0.17	0.32	0.18	0.81	0.74
d, Delay for Lane Group [s/veh]	4.24	9.06	8.92	4.34	7.35	7.33	49.57	47.82	48.61	46.07
Lane Group LOS	A	A	A	A	A	A	D	D	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.10	3.42	3.22	0.23	1.76	1.73	0.58	0.34	4.96	4.65
50th-Percentile Queue Length [ft/ln]	2.38	85.53	80.49	5.68	43.97	43.34	14.56	8.40	124.10	116.26
95th-Percentile Queue Length [veh/ln]	0.17	6.16	5.80	0.41	3.17	3.12	1.05	0.60	8.62	8.19
95th-Percentile Queue Length [ft/ln]	4.28	153.96	144.89	10.23	79.14	78.01	26.20	15.12	215.45	204.67

Movement, Approach, & Intersection Results

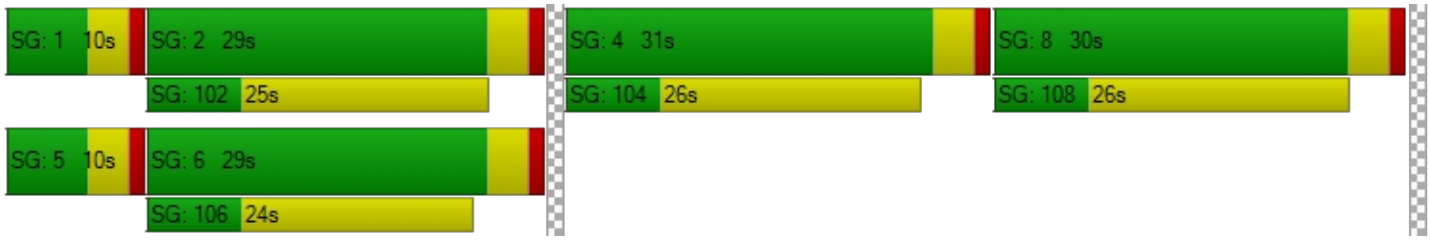
d_M, Delay for Movement [s/veh]	4.24	9.06	8.92	4.34	7.34	7.33	49.57	49.57	47.82	47.59	46.07	46.07
Movement LOS	A	A	A	A	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	8.87			7.08			48.92			47.36		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	18.38											
Intersection LOS	B											
Intersection V/C	0.355											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	39.62	39.62	39.62	39.62
l_p,int, Pedestrian LOS Score for Intersection	2.586	2.478	1.987	2.228
Crosswalk LOS	B	B	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	500	500	520	540
d_b, Bicycle Delay [s]	28.14	28.14	27.40	26.66
l_b,int, Bicycle LOS Score for Intersection	2.145	1.941	1.617	2.180
Bicycle LOS	B	A	A	B

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 9: Brea Mall South at State College Boulevard

Control Type:	Signalized	Delay (sec / veh):	30.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.636

Intersection Setup

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Base Volume Input [veh/h]	144	25	67	45	19	383	494	568	23	99	467	27
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	144	25	67	45	19	383	494	568	23	99	467	27
Peak Hour Factor	0.8330	0.8330	0.8330	0.9000	0.9000	0.9000	0.8700	0.8700	0.8700	0.9090	0.9090	0.9090
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	43	8	20	13	5	106	142	163	7	27	128	7
Total Analysis Volume [veh/h]	173	30	80	50	21	426	568	653	26	109	514	30
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	4	5	2	0	1	6	0
Auxiliary Signal Groups						4,5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	6	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	30	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	37	0	0	10	10	41	31	0	42	32	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	26	0	0	0	0	0	20	0	0	21	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No	No	No	No		No	No	
Maximum Recall		No			No	No	No	No		No	No	
Pedestrian Recall		No			No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	C	C	R	L	C	C	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	11	11	6	6	50	25	78	78	9	62	62
g / C, Green / Cycle	0.09	0.09	0.09	0.05	0.05	0.42	0.21	0.65	0.65	0.08	0.52	0.52
(v / s)_i Volume / Saturation Flow Rate	0.04	0.07	0.04	0.03	0.01	0.22	0.16	0.18	0.18	0.06	0.14	0.14
s, saturation flow rate [veh/h]	1800	1800	1900	1800	1900	1900	3500	1900	1900	1800	1900	1900
c, Capacity [veh/h]	197	215	171	93	98	790	727	1231	1231	139	983	983
d1, Uniform Delay [s]	51.90	53.54	51.92	55.58	54.64	26.42	45.01	9.07	9.04	54.45	16.34	16.29
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.38	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.21	2.62	1.98	4.80	1.08	1.99	1.88	0.56	0.55	9.33	0.71	0.69
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.38	0.59	0.47	0.54	0.21	0.54	0.78	0.28	0.27	0.79	0.28	0.27
d, Delay for Lane Group [s/veh]	53.11	56.15	53.90	60.38	55.72	28.41	46.89	9.63	9.59	63.78	17.04	16.98
Lane Group LOS	D	E	D	E	E	C	D	A	A	E	B	B
Critical Lane Group	No	Yes	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.22	3.93	2.39	1.60	0.64	9.55	8.16	3.86	3.80	3.60	4.43	4.34
50th-Percentile Queue Length [ft/ln]	55.52	98.35	59.68	40.08	16.01	238.66	204.03	96.57	95.11	89.96	110.75	108.51
95th-Percentile Queue Length [veh/ln]	4.00	7.08	4.30	2.89	1.15	14.61	12.85	6.95	6.85	6.48	7.88	7.76
95th-Percentile Queue Length [ft/ln]	99.94	177.03	107.43	72.15	28.82	365.33	321.16	173.83	171.20	161.93	197.05	193.93

Movement, Approach, & Intersection Results

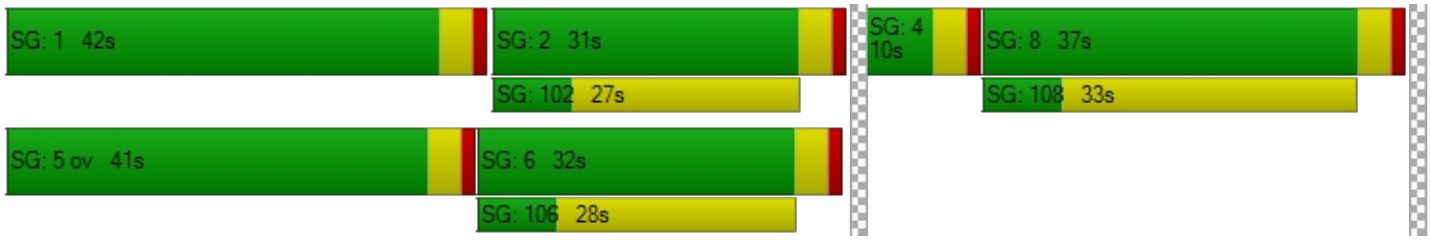
d_M, Delay for Movement [s/veh]	54.77	56.15	53.90	60.38	55.72	28.41	46.89	9.61	9.59	63.78	17.01	16.98
Movement LOS	D	E	D	E	E	C	D	A	A	E	B	B
d_A, Approach Delay [s/veh]	54.71			32.78			26.59			24.82		
Approach LOS	D			C			C			C		
d_I, Intersection Delay [s/veh]	30.27											
Intersection LOS	C											
Intersection V/C	0.636											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.54	49.54	0.00	49.54
l_p,int, Pedestrian LOS Score for Intersection	2.399	2.533	0.000	2.594
Crosswalk LOS	B	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	550	100	450	466
d_b, Bicycle Delay [s]	31.57	54.18	36.07	35.30
l_b,int, Bicycle LOS Score for Intersection	2.027	1.970	2.588	2.098
Bicycle LOS	B	A	B	B

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 10: Harbor Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	47.2
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.922

Intersection Setup

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	443	1174	232	274	976	418	320	1289	298	450	1606	285
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	443	1174	232	274	976	418	320	1289	298	450	1606	285
Peak Hour Factor	0.9550	0.9550	0.9550	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9450	0.9450	0.9450
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	116	307	61	72	258	110	85	341	79	119	425	75
Total Analysis Volume [veh/h]	464	1229	243	290	1032	442	338	1363	315	476	1699	302
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	19	42	0	16	39	0	17	42	0	20	45	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	31	0	0	28	0	0	31	0	0	29	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	35	35	12	32	32	13	41	41	16	44	44
g / C, Green / Cycle	0.13	0.29	0.29	0.10	0.26	0.26	0.11	0.34	0.34	0.13	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.13	0.22	0.13	0.08	0.18	0.23	0.10	0.30	0.29	0.14	0.30	0.16
s, saturation flow rate [veh/h]	3500	5700	1900	3500	5700	1900	3500	3800	1900	3500	5700	1900
c, Capacity [veh/h]	440	1647	549	348	1496	499	383	1309	654	469	2105	702
d1, Uniform Delay [s]	52.50	38.72	34.82	53.12	39.90	42.58	52.74	36.76	36.24	52.01	34.05	28.41
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.31	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	35.76	0.69	0.56	5.26	0.58	13.84	6.81	7.77	12.01	22.88	3.45	1.93
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.05	0.75	0.44	0.83	0.69	0.89	0.88	0.86	0.84	1.01	0.81	0.43
d, Delay for Lane Group [s/veh]	88.26	39.41	35.38	58.38	40.48	56.42	59.55	44.53	48.25	74.89	37.49	30.34
Lane Group LOS	F	D	D	E	D	E	E	D	D	F	D	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	8.81	10.97	5.88	4.55	9.19	14.41	5.38	16.70	16.75	8.54	15.32	6.89
50th-Percentile Queue Length [ft/ln]	220.23	274.21	147.03	113.74	229.73	360.20	134.56	417.57	418.81	213.51	382.94	172.33
95th-Percentile Queue Length [veh/ln]	13.98	16.40	9.86	8.05	14.16	20.63	9.19	23.41	23.46	13.42	21.74	11.20
95th-Percentile Queue Length [ft/ln]	349.52	409.99	246.45	201.19	354.02	515.83	229.68	585.14	586.62	335.40	543.40	279.98

Movement, Approach, & Intersection Results

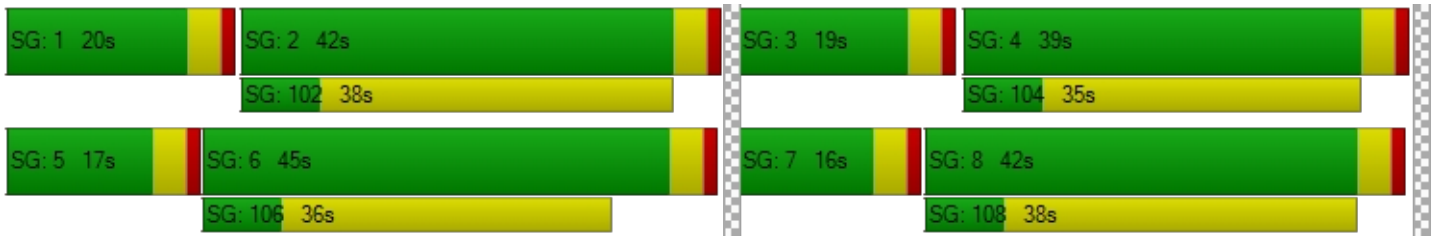
d_M, Delay for Movement [s/veh]	88.26	39.41	35.38	58.38	40.48	56.42	59.55	45.16	48.25	74.89	37.49	30.34
Movement LOS	F	D	D	E	D	E	E	D	D	F	D	C
d_A, Approach Delay [s/veh]	50.61			47.41			48.06			43.81		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	47.24											
Intersection LOS	D											
Intersection V/C	0.922											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.54	49.54	49.54	49.54
l_p,int, Pedestrian LOS Score for Intersection	3.270	3.257	3.302	3.337
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	633	583	633	683
d_b, Bicycle Delay [s]	28.04	30.13	28.04	26.03
l_b,int, Bicycle LOS Score for Intersection	2.624	2.530	2.668	2.922
Bicycle LOS	B	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 11: Puente Street at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	19.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.691

Intersection Setup

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	36	49	84	189	108	217	139	1613	38	107	1824	279
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	36	49	84	189	108	217	139	1613	38	107	1824	279
Peak Hour Factor	0.7970	0.7970	0.7970	0.6700	0.6700	0.6700	0.9700	0.9700	0.9700	0.9160	0.9160	0.9160
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	15	26	71	40	81	36	416	10	29	498	76
Total Analysis Volume [veh/h]	45	61	105	282	161	324	143	1663	39	117	1991	305
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	43	0	0	43	0	13	36	0	11	34	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	23	0	0	17	0	0	23	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	18	18	18	18	18	9	53	53	7	51	51
g / C, Green / Cycle	0.20	0.20	0.20	0.20	0.20	0.20	0.10	0.58	0.58	0.08	0.56	0.56
(v / s)_i Volume / Saturation Flow Rate	0.03	0.03	0.06	0.16	0.04	0.17	0.08	0.29	0.31	0.07	0.35	0.16
s, saturation flow rate [veh/h]	1800	1900	1900	1800	3800	1900	1800	3800	1900	1800	5700	1900
c, Capacity [veh/h]	351	389	389	367	778	389	178	2213	1106	143	3210	1070
d1, Uniform Delay [s]	29.21	29.42	30.15	33.77	29.74	34.34	39.74	11.15	11.33	40.81	13.21	10.24
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.16	0.19	0.37	3.42	0.13	4.67	8.22	0.83	1.79	10.63	0.91	0.67
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.13	0.16	0.27	0.77	0.21	0.83	0.80	0.51	0.53	0.82	0.62	0.29
d, Delay for Lane Group [s/veh]	29.37	29.61	30.51	37.20	29.87	39.01	47.96	11.98	13.12	51.44	14.12	10.91
Lane Group LOS	C	C	C	D	C	D	D	B	B	D	B	B
Critical Lane Group	No	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.80	1.09	1.93	6.04	1.44	7.15	3.46	6.24	6.87	2.95	8.45	3.11
50th-Percentile Queue Length [ft/ln]	20.03	27.31	48.27	150.94	36.11	178.77	86.56	155.96	171.74	73.66	211.18	77.79
95th-Percentile Queue Length [veh/ln]	1.44	1.97	3.48	10.07	2.60	11.54	6.23	10.33	11.17	5.30	13.21	5.60
95th-Percentile Queue Length [ft/ln]	36.05	49.15	86.88	251.69	64.99	288.40	155.81	258.37	279.20	132.58	330.35	140.02

Movement, Approach, & Intersection Results

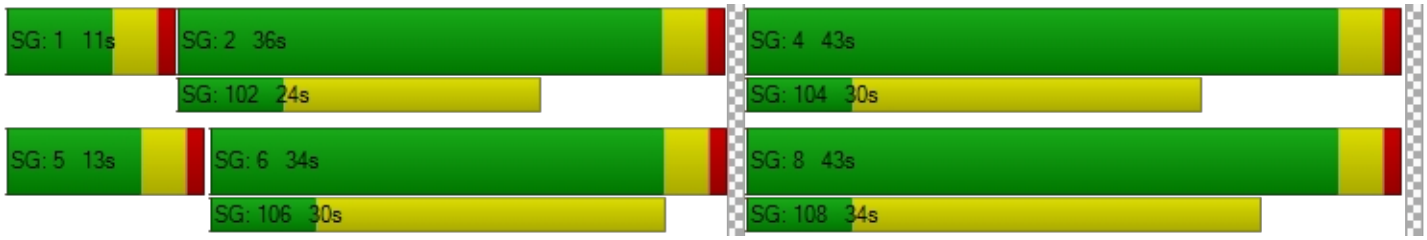
d_M, Delay for Movement [s/veh]	29.37	29.61	30.51	37.20	29.87	39.01	47.96	12.35	13.12	51.44	14.12	10.91
Movement LOS	C	C	C	D	C	D	D	B	B	D	B	B
d_A, Approach Delay [s/veh]	30.01			36.42			15.13			15.53		
Approach LOS	C			D			B			B		
d_I, Intersection Delay [s/veh]	19.03											
Intersection LOS	B											
Intersection V/C	0.691											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.70	34.70	34.70	34.70
l_p,int, Pedestrian LOS Score for Intersection	2.402	2.548	3.243	3.670
Crosswalk LOS	B	B	C	D
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	866	866	711	666
d_b, Bicycle Delay [s]	14.47	14.47	18.71	20.02
l_b,int, Bicycle LOS Score for Intersection	1.908	2.192	2.574	2.887
Bicycle LOS	A	B	B	C

Sequence

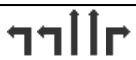
Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: Brea Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	41.6
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.878

Intersection Setup

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	536	890	276	264	696	217	242	1836	433	253	1850	197
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	536	890	276	264	696	217	242	1836	433	253	1850	197
Peak Hour Factor	0.9630	0.9630	0.9630	0.9380	0.9380	0.9380	0.9710	0.9710	0.9710	0.9670	0.9670	0.9670
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	139	231	72	70	186	58	62	473	111	65	478	51
Total Analysis Volume [veh/h]	557	924	287	281	742	231	249	1891	446	262	1913	204
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	24	47	0	16	39	0	13	43	0	14	44	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	30	0	0	28	0	0	30	0	0	30	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	20	35	35	12	27	27	9	47	47	10	48	48
g / C, Green / Cycle	0.17	0.29	0.29	0.10	0.22	0.22	0.08	0.39	0.39	0.08	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.16	0.16	0.15	0.08	0.20	0.12	0.07	0.33	0.23	0.07	0.34	0.11
s, saturation flow rate [veh/h]	3500	5700	1900	3500	3800	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	585	1673	558	340	849	424	267	2233	744	296	2280	760
d1, Uniform Delay [s]	49.55	35.78	35.31	53.25	45.01	41.24	55.17	33.26	29.04	54.41	32.55	24.23
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.25	0.29	0.74	5.15	3.02	1.09	13.83	4.21	3.55	8.69	3.91	0.87
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.95	0.55	0.51	0.83	0.87	0.54	0.93	0.85	0.60	0.89	0.84	0.27
d, Delay for Lane Group [s/veh]	58.80	36.06	36.05	58.40	48.03	42.32	69.01	37.46	32.59	63.10	36.46	25.09
Lane Group LOS	E	D	D	E	D	D	E	D	C	E	D	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	9.00	7.64	7.10	4.41	10.97	6.18	4.26	17.26	10.86	4.27	17.23	4.09
50th-Percentile Queue Length [ft/ln]	224.97	191.08	177.57	110.14	274.21	154.55	106.46	431.40	271.45	106.87	430.82	102.25
95th-Percentile Queue Length [veh/ln]	13.92	12.18	11.47	7.85	16.40	10.26	7.64	24.07	16.26	7.67	24.04	7.36
95th-Percentile Queue Length [ft/ln]	347.96	304.43	286.84	196.19	410.00	256.49	191.07	601.71	406.55	191.64	601.02	184.05

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	58.80	36.06	36.05	58.40	48.03	42.32	69.01	37.46	32.59	63.10	36.46	25.09
Movement LOS	E	D	D	E	D	D	E	D	C	E	D	C
d_A, Approach Delay [s/veh]	43.22			49.30			39.66			38.42		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	41.59											
Intersection LOS	D											
Intersection V/C	0.878											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.54	49.54	49.54	49.54
l_p,int, Pedestrian LOS Score for Intersection	3.131	3.060	3.436	3.387
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	716	583	650	666
d_b, Bicycle Delay [s]	24.73	30.13	27.37	26.69
l_b,int, Bicycle LOS Score for Intersection	2.532	2.594	2.982	2.868
Bicycle LOS	B	B	C	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 13: Randolph Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	25.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.763

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	58	39	69	333	30	219	257	1807	45	73	2051	339
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	58	39	69	333	30	219	257	1807	45	73	2051	339
Peak Hour Factor	0.8890	0.8890	0.8890	0.8820	0.8820	0.8820	0.9540	0.9540	0.9540	0.9450	0.9450	0.9450
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	11	19	94	9	62	67	474	12	19	543	90
Total Analysis Volume [veh/h]	65	44	78	378	34	248	269	1894	47	77	2170	359
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	10	0	0	41	0	14	44	0	10	40	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	29	0	0	28	0	0	29	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	105	105	105	105	105	105	105	105	105	105	105
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	7	7	19	19	10	58	58	6	54	54
g / C, Green / Cycle	0.06	0.06	0.06	0.18	0.18	0.09	0.55	0.55	0.06	0.51	0.51
(v / s)_i Volume / Saturation Flow Rate	0.03	0.03	0.04	0.11	0.15	0.08	0.34	0.35	0.04	0.38	0.19
s, saturation flow rate [veh/h]	1800	1800	1900	3500	1900	3500	3800	1900	1800	5700	1900
c, Capacity [veh/h]	114	114	120	632	343	333	2083	1042	100	2900	967
d1, Uniform Delay [s]	47.54	47.56	48.09	39.58	41.46	46.61	16.16	16.50	48.95	20.48	15.64
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.04	3.12	5.74	0.91	4.95	4.63	1.36	2.99	11.47	1.82	1.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.47	0.48	0.65	0.60	0.82	0.81	0.61	0.64	0.77	0.75	0.37
d, Delay for Lane Group [s/veh]	50.58	50.68	53.83	40.49	46.41	51.23	17.51	19.49	60.42	22.30	16.73
Lane Group LOS	D	D	D	D	D	D	B	B	E	C	B
Critical Lane Group	No	No	Yes	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.46	1.48	2.18	4.54	7.44	3.64	10.26	11.35	2.31	13.83	5.35
50th-Percentile Queue Length [ft/ln]	36.54	37.09	54.54	113.47	186.01	91.07	256.53	283.83	57.64	345.68	133.74
95th-Percentile Queue Length [veh/ln]	2.63	2.67	3.93	8.03	11.91	6.56	15.51	16.88	4.15	19.93	9.14
95th-Percentile Queue Length [ft/ln]	65.77	66.76	98.18	200.82	297.84	163.92	387.86	421.98	103.76	498.14	228.57

Movement, Approach, & Intersection Results

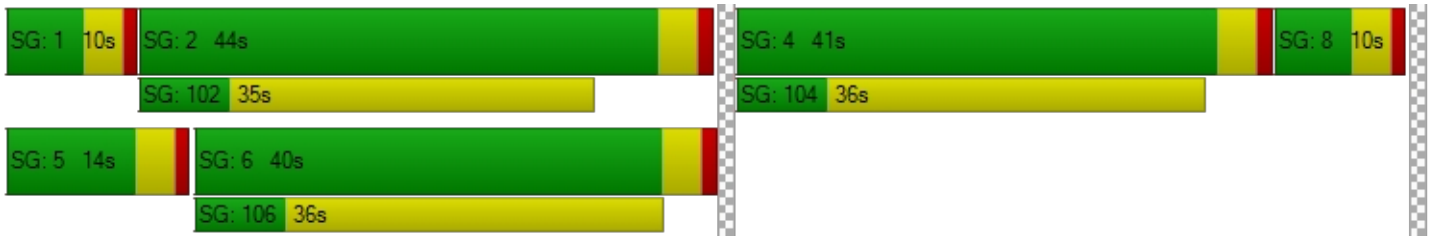
d_M, Delay for Movement [s/veh]	50.60	50.68	53.83	40.49	46.41	46.41	51.23	18.16	19.49	60.42	22.30	16.73
Movement LOS	D	D	D	D	D	D	D	B	B	E	C	B
d_A, Approach Delay [s/veh]	51.97			43.02			22.21			22.66		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	25.82											
Intersection LOS	C											
Intersection V/C	0.763											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	42.11	42.11	42.11	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.222	2.567	3.305	0.000
Crosswalk LOS	B	B	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	114	704	761	685
d_b, Bicycle Delay [s]	46.70	22.05	20.14	22.70
l_b,int, Bicycle LOS Score for Intersection	1.714	2.649	2.775	2.993
Bicycle LOS	A	B	C	C

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 14: State College Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	62.6
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.047

Intersection Setup

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	385	598	370	446	315	98	112	1975	112	474	1996	501
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	385	598	370	446	315	98	112	1975	112	474	1996	501
Peak Hour Factor	0.8990	0.8990	0.8990	0.8970	0.8970	0.8970	0.9570	0.9570	0.9570	0.9550	0.9550	0.9550
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	107	166	103	124	88	27	29	516	29	124	523	131
Total Analysis Volume [veh/h]	428	665	412	497	351	109	117	2064	117	496	2090	525
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	29	41	0	27	39	0	10	34	0	18	42	42
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	30	0	0	28	0	0	23	0	0	23	23
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	17	29	29	23	35	35	6	37	37	14	46	73
g / C, Green / Cycle	0.14	0.25	0.25	0.19	0.29	0.29	0.05	0.31	0.31	0.12	0.38	0.60
(v / s)_i Volume / Saturation Flow Rate	0.12	0.18	0.22	0.25	0.13	0.12	0.03	0.28	0.30	0.14	0.37	0.28
s, saturation flow rate [veh/h]	3500	3800	1900	2000	1900	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	505	934	467	384	558	558	177	1776	592	412	2158	1147
d1, Uniform Delay [s]	50.12	41.41	43.63	48.54	34.31	33.91	56.02	39.68	40.70	53.00	36.62	13.03
k, delay calibration	0.11	0.11	0.24	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.06	1.02	11.46	136.97	0.52	0.45	4.18	8.23	29.26	97.59	13.26	1.32
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.71	0.88	1.29	0.43	0.40	0.66	0.91	0.96	1.21	0.97	0.46
d, Delay for Lane Group [s/veh]	54.18	42.44	55.08	185.50	34.83	34.37	60.20	47.91	69.97	150.59	49.88	14.34
Lane Group LOS	D	D	E	F	C	C	E	D	E	F	D	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	6.54	9.11	13.20	13.02	5.75	5.22	1.85	16.35	21.18	11.77	22.24	7.89
50th-Percentile Queue Length [ft/ln]	163.58	227.76	330.12	325.47	143.76	130.62	46.16	408.79	529.61	294.30	555.92	197.29
95th-Percentile Queue Length [veh/ln]	10.74	14.06	19.16	21.21	9.68	8.97	3.32	22.98	28.73	18.72	29.97	12.50
95th-Percentile Queue Length [ft/ln]	268.46	351.51	479.10	530.20	242.08	224.34	83.08	574.58	718.32	467.96	749.26	312.47

Movement, Approach, & Intersection Results

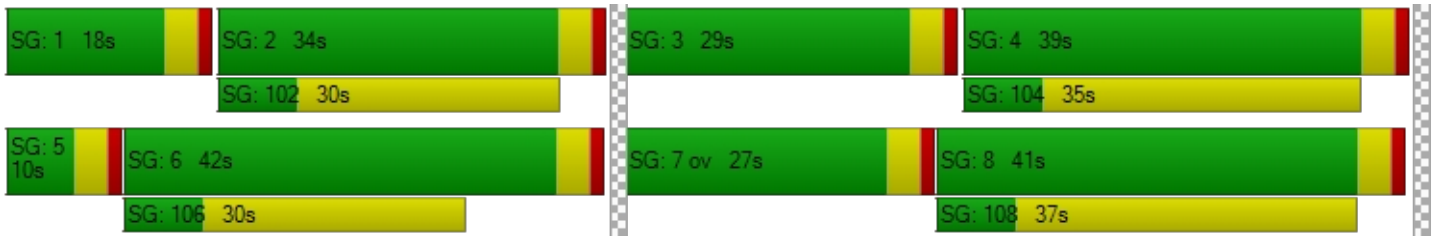
d_M, Delay for Movement [s/veh]	54.18	42.44	55.08	185.50	34.68	34.37	60.20	52.76	69.97	150.59	49.88	14.34
Movement LOS	D	D	E	F	C	C	E	D	E	F	D	B
d_A, Approach Delay [s/veh]	49.24			112.97			54.02			59.94		
Approach LOS	D			F			D			E		
d_I, Intersection Delay [s/veh]	62.61											
Intersection LOS	E											
Intersection V/C	1.047											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.54	49.54	49.54	49.54
l_p,int, Pedestrian LOS Score for Intersection	2.952	2.835	3.397	3.573
Crosswalk LOS	C	C	C	D
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	616	583	500	633
d_b, Bicycle Delay [s]	28.73	30.13	33.78	28.04
l_b,int, Bicycle LOS Score for Intersection	2.801	2.349	2.508	3.271
Bicycle LOS	C	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 15: SR-57 SB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	16.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.754

Intersection Setup

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	0	0	0	687	0	558	0	1779	1031	0	2409	417
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	687	0	558	0	1779	1031	0	2409	417
Peak Hour Factor	1.0000	1.0000	1.0000	0.9390	1.0000	0.9390	1.0000	0.9540	0.9540	1.0000	0.9730	0.9730
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	183	0	149	0	466	270	0	619	107
Total Analysis Volume [veh/h]	0	0	0	732	0	594	0	1865	1081	0	2476	429
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	7	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	6	0	0	0	6	0	0	6	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	64	0	0	0	26	0	0	26	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	15	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	C
C, Cycle Length [s]		90	90	90	90	90
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		27	27	27	55	55
g / C, Green / Cycle		0.30	0.30	0.30	0.61	0.61
(v / s)_i Volume / Saturation Flow Rate		0.25	0.25	0.23	0.33	0.43
s, saturation flow rate [veh/h]		1750	1750	1900	5700	5700
c, Capacity [veh/h]		528	528	573	3473	3473
d1, Uniform Delay [s]		29.31	29.31	28.55	10.19	12.12
k, delay calibration		0.11	0.11	0.11	0.50	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		3.62	3.62	2.24	0.60	1.27
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.84	0.84	0.77	0.54	0.71
d, Delay for Lane Group [s/veh]		32.93	32.93	30.79	10.79	13.39
Lane Group LOS		C	C	C	B	B
Critical Lane Group		Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]		9.13	9.13	8.73	6.56	10.46
50th-Percentile Queue Length [ft/ln]		228.28	228.28	218.35	163.88	261.43
95th-Percentile Queue Length [veh/ln]		14.09	14.09	13.58	10.75	15.76
95th-Percentile Queue Length [ft/ln]		352.18	352.18	339.52	268.85	394.01

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	32.93	0.00	31.34	0.00	10.79	0.00	0.00	13.39	0.00
Movement LOS				C		C		B			B	
d_A, Approach Delay [s/veh]	0.00			32.22			10.79			13.39		
Approach LOS	A			C			B			B		
d_I, Intersection Delay [s/veh]	16.94											
Intersection LOS	B											
Intersection V/C	0.754											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	34.63	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	2.454	0.000	0.000
Crosswalk LOS	F	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1335	489	489
d_b, Bicycle Delay [s]	44.96	4.98	25.65	25.65
l_b,int, Bicycle LOS Score for Intersection	4.132	3.748	2.585	2.921
Bicycle LOS	D	D	B	C

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 16: SR-57 NB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	22.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.785

Intersection Setup

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	1016	64	453	0	0	192	182	1920	381	0	2500	38
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1016	64	453	0	0	192	182	1920	381	0	2500	38
Peak Hour Factor	0.9490	0.9490	0.9490	1.0000	1.0000	0.8840	0.9510	0.9510	0.9510	1.0000	0.9830	0.9830
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	268	17	119	0	0	54	48	505	100	0	636	10
Total Analysis Volume [veh/h]	1071	67	477	0	0	217	191	2019	401	0	2543	39
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Overlap	Protecte	Permiss	Unsigna	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	0	5	5	2	0	0	6	0
Auxiliary Signal Groups						5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	6	0	0	0	6	6	6	0	0	6	0
Maximum Green [s]	0	30	0	0	0	30	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	1.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	39	0	0	0	21	21	51	0	0	30	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	22	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No				No		No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No				No	No	No			No	
Maximum Recall		No				No	No	No			No	
Pedestrian Recall		No				No	No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	R	L	C	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	26	26	26	12	12	56	40	40
g / C, Green / Cycle	0.29	0.29	0.29	0.13	0.13	0.62	0.45	0.45
(v / s)_i Volume / Saturation Flow Rate	0.23	0.23	0.22	0.06	0.11	0.35	0.34	0.34
s, saturation flow rate [veh/h]	3500	1750	1900	3800	1800	5700	5700	1900
c, Capacity [veh/h]	1015	507	551	498	236	3541	2540	847
d1, Uniform Delay [s]	29.38	29.64	28.94	36.05	38.02	10.00	20.96	20.96
k, delay calibration	0.11	0.16	0.13	0.11	0.11	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.37	4.59	2.37	0.60	6.49	0.67	2.23	6.43
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.78	0.81	0.74	0.44	0.81	0.57	0.76	0.76
d, Delay for Lane Group [s/veh]	30.75	34.23	31.31	36.65	44.51	10.68	23.19	27.39
Lane Group LOS	C	C	C	D	D	B	C	C
Critical Lane Group	No	Yes	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	7.85	8.60	8.13	2.21	4.45	7.08	11.25	12.24
50th-Percentile Queue Length [ft/ln]	196.29	215.11	203.29	55.27	111.33	177.08	281.19	305.93
95th-Percentile Queue Length [veh/ln]	12.45	13.42	12.81	3.98	7.91	11.45	16.75	17.97
95th-Percentile Queue Length [ft/ln]	311.17	335.38	320.21	99.48	197.85	286.20	418.69	449.35

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	31.62	34.23	31.75	0.00	0.00	36.65	44.51	10.68	0.00	0.00	24.19	27.39
Movement LOS	C	C	C			D	D	B			C	C
d_A, Approach Delay [s/veh]	31.77			36.65			13.60			24.24		
Approach LOS	C			D			B			C		
d_I, Intersection Delay [s/veh]	22.93											
Intersection LOS	C											
Intersection V/C	0.785											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.614	2.107	0.000	0.000
Crosswalk LOS	B	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	778	378	1044	578
d_b, Bicycle Delay [s]	16.82	29.62	10.28	22.77
l_b,int, Bicycle LOS Score for Intersection	4.224	1.560	2.775	2.625
Bicycle LOS	D	A	C	B

Sequence

Ring 1	-	2	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 17: Associated Road at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	46.2
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.913

Intersection Setup

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	220	262	86	297	353	261	279	1931	144	178	1808	191
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	220	262	86	297	353	261	279	1931	144	178	1808	191
Peak Hour Factor	0.9100	0.9100	0.9100	0.8290	0.8290	0.8290	0.9480	0.9480	0.9480	0.9350	0.9350	0.9350
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	60	72	24	90	106	79	74	509	38	48	483	51
Total Analysis Volume [veh/h]	242	288	95	358	426	315	294	2037	152	190	1934	204
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	13	39	0	16	42	0	25	48	0	17	40	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	28	0	0	29	0	0	26	0	0	25	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	27	27	12	30	30	21	52	52	13	44	44
g / C, Green / Cycle	0.08	0.22	0.22	0.10	0.25	0.25	0.18	0.44	0.44	0.11	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.07	0.10	0.10	0.10	0.22	0.17	0.16	0.38	0.39	0.11	0.28	0.29
s, saturation flow rate [veh/h]	3500	1900	1900	3500	1900	1900	1800	3800	1900	1800	5700	1900
c, Capacity [veh/h]	267	422	422	354	469	469	316	1651	826	197	2100	700
d1, Uniform Delay [s]	55.05	40.61	40.27	53.99	43.94	40.86	48.81	30.98	31.59	53.27	33.22	33.69
k, delay calibration	0.11	0.11	0.11	0.11	0.25	0.11	0.20	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.15	0.82	0.71	25.25	14.15	1.71	18.86	6.79	15.00	22.55	2.60	8.57
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.91	0.47	0.44	1.01	0.91	0.67	0.93	0.87	0.90	0.97	0.76	0.78
d, Delay for Lane Group [s/veh]	66.20	41.44	40.98	79.25	58.09	42.57	67.68	37.77	46.59	75.82	35.82	42.26
Lane Group LOS	E	D	D	F	E	D	E	D	D	E	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.05	5.22	4.79	6.58	14.05	8.62	10.31	20.14	22.98	6.93	13.85	15.69
50th-Percentile Queue Length [ft/ln]	101.14	130.39	119.66	164.39	351.19	215.38	257.67	503.40	574.59	173.34	346.24	392.13
95th-Percentile Queue Length [veh/ln]	7.28	8.96	8.37	10.83	20.19	13.43	15.57	27.50	30.85	11.25	19.95	22.18
95th-Percentile Queue Length [ft/ln]	182.06	224.03	209.36	270.76	504.86	335.72	389.30	687.38	771.15	281.30	498.82	554.51

Movement, Approach, & Intersection Results

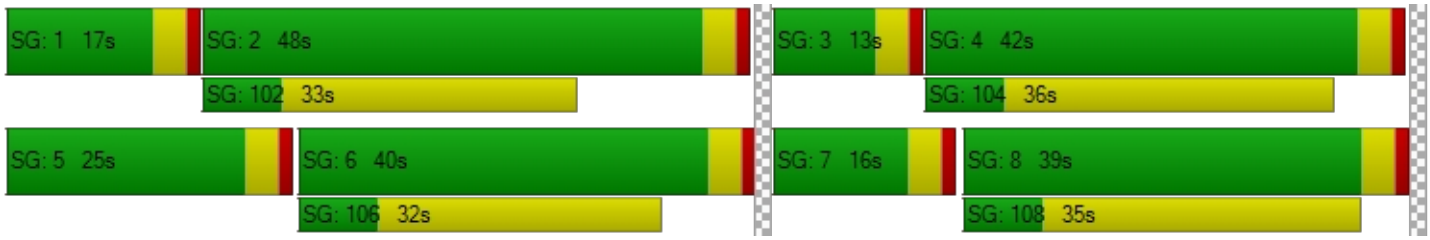
d_M, Delay for Movement [s/veh]	66.20	41.30	40.98	79.25	58.09	42.57	67.68	40.33	46.59	75.82	36.97	42.26
Movement LOS	E	D	D	F	E	D	E	D	D	E	D	D
d_A, Approach Delay [s/veh]	50.89			60.53			43.96			40.60		
Approach LOS	D			E			D			D		
d_I, Intersection Delay [s/veh]	46.21											
Intersection LOS	D											
Intersection V/C	0.913											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.54	49.54	49.54	49.54
l_p,int, Pedestrian LOS Score for Intersection	2.585	2.773	3.345	3.326
Crosswalk LOS	B	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	583	633	733	600
d_b, Bicycle Delay [s]	30.13	28.04	24.09	29.43
l_b,int, Bicycle LOS Score for Intersection	2.075	3.373	2.925	2.520
Bicycle LOS	B	C	C	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 18: Castlegate Lane/Placentia Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	26.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.835

Intersection Setup

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	248	48	272	26	23	15	19	1942	286	237	1992	58
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	248	48	272	26	23	15	19	1942	286	237	1992	58
Peak Hour Factor	0.8580	0.8580	0.8580	0.6480	0.6480	0.6480	0.9520	0.9520	0.9520	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	72	14	79	10	9	6	5	510	75	63	526	15
Total Analysis Volume [veh/h]	289	56	317	40	35	23	20	2040	300	251	2106	61
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	27	0	0	10	0	10	32	0	26	48	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	15	0	0	0	0	0	21	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	C
C, Cycle Length [s]	95	95	95	95	95	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	18	18	6	6	3	40	40	15	53	53
g / C, Green / Cycle	0.19	0.19	0.19	0.06	0.06	0.03	0.42	0.42	0.16	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.10	0.10	0.17	0.02	0.03	0.01	0.36	0.16	0.14	0.37	0.39
s, saturation flow rate [veh/h]	1750	1750	1900	1800	1900	1800	5700	1900	1800	3800	1900
c, Capacity [veh/h]	338	338	367	107	113	49	2382	794	291	2098	1049
d1, Uniform Delay [s]	34.35	34.40	37.19	43.05	43.42	45.53	25.11	19.15	38.87	15.27	15.66
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.18	1.21	6.14	2.15	3.58	5.37	4.23	1.37	7.53	1.79	4.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.51	0.51	0.86	0.37	0.51	0.41	0.86	0.38	0.86	0.68	0.71
d, Delay for Lane Group [s/veh]	35.53	35.61	43.33	45.20	46.99	50.90	29.34	20.52	46.40	17.06	19.68
Lane Group LOS	D	D	D	D	D	D	C	C	D	B	B
Critical Lane Group	No	No	Yes	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.61	3.66	7.63	0.96	1.43	0.53	14.15	4.75	6.23	10.70	12.05
50th-Percentile Queue Length [ft/ln]	90.20	91.60	190.80	24.07	35.67	13.37	353.78	118.72	155.74	267.52	301.26
95th-Percentile Queue Length [veh/ln]	6.49	6.60	12.16	1.73	2.57	0.96	20.32	8.32	10.32	16.07	17.74
95th-Percentile Queue Length [ft/ln]	162.37	164.88	304.07	43.33	64.20	24.06	508.02	208.06	258.07	401.64	443.59

Movement, Approach, & Intersection Results

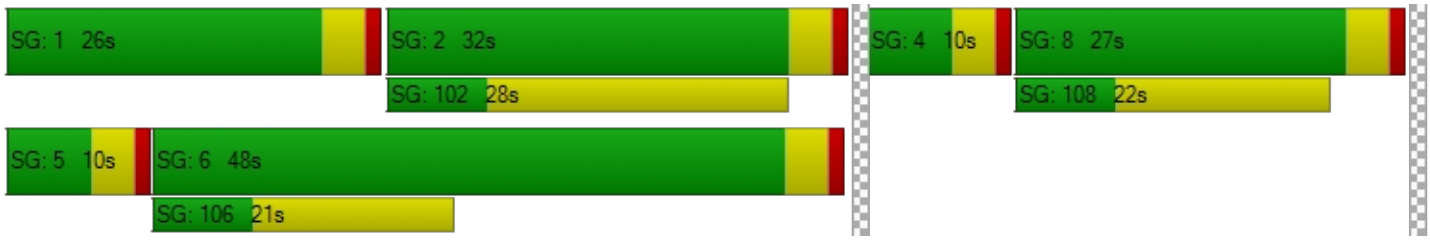
d_M, Delay for Movement [s/veh]	35.56	35.61	43.33	45.20	46.99	46.99	50.90	29.34	20.52	46.40	17.91	19.68
Movement LOS	D	D	D	D	D	D	D	C	C	D	B	B
d_A, Approach Delay [s/veh]	39.28			46.26			28.40			20.91		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	26.75											
Intersection LOS	C											
Intersection V/C	0.835											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	37.18	37.18	0.00	37.18
l_p,int, Pedestrian LOS Score for Intersection	2.438	2.019	0.000	3.267
Crosswalk LOS	B	B	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	484	126	589	926
d_b, Bicycle Delay [s]	27.32	41.73	23.66	13.72
l_b,int, Bicycle LOS Score for Intersection	2.652	1.721	2.858	2.890
Bicycle LOS	B	A	C	C

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Brea Mall Expansion, Brea

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Report File: N:\...\Sat 2026.pdf

Scenario 6 Sat MD 2026
4/12/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State College Boulevard at Lambert Road	Signalized	HCM 6th Edition	WB Left	0.899	44.6	D
2	SR-57 SB Ramps at Lambert Road	Signalized	HCM 6th Edition	WB Left	0.801	26.2	C
3	SR-57 NB Ramps at Lambert Road	Signalized	HCM 6th Edition	NB Left	0.773	19.1	B
4	Randolph Avenue at Birch Street	Signalized	HCM 6th Edition	EB Left	0.512	19.7	B
5	State College Boulevard at Birch Street	Signalized	HCM 6th Edition	NB Left	0.795	41.3	D
6	S Associated Road at Birch Street	Signalized	HCM 6th Edition	EB Left	0.608	21.2	C
7	Randolph Avenue at Madison Way	Signalized	HCM 6th Edition	WB Left	0.257	20.7	C
8	Randolph Avenue at Brea Mall	Signalized	HCM 6th Edition	EB Left	0.486	23.6	C
9	Brea Mall South at State College Boulevard	Signalized	HCM 6th Edition	WB Left	0.829	32.8	C
10	Harbor Boulevard at Imperial Highway	Signalized	HCM 6th Edition	SB Left	0.757	39.9	D
11	Puente Street at Imperial Highway	Signalized	HCM 6th Edition	EB Left	0.512	14.1	B
12	Brea Boulevard at Imperial Highway	Signalized	HCM 6th Edition	WB Left	0.920	48.1	D
13	Randolph Avenue at Imperial Highway	Signalized	HCM 6th Edition	WB Left	0.906	45.3	D
14	State College Boulevard at Imperial Highway	Signalized	HCM 6th Edition	SB Left	1.348	148.2	F
15	SR-57 SB Ramps at Imperial Highway	Signalized	HCM 6th Edition	SB Left	0.849	20.8	C
16	SR-57 NB Ramps at Imperial Highway	Signalized	HCM 6th Edition	EB Left	0.854	34.0	C
17	Associated Road at Imperial Highway	Signalized	HCM 6th Edition	NB Left	0.850	35.6	D
18	Castlegate Lane/Placentia	Signalized	HCM 6th	EB Left	0.811	23.4	C

16	Avenue at Imperial Highway	Signalized	Edition	EB Left	0.611	23.4	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: State College Boulevard at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	44.6
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.899

Intersection Setup

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	139	276	389	547	387	5	19	1230	276	743	1631	751
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	139	276	389	547	387	5	19	1230	276	743	1631	751
Peak Hour Factor	0.9010	0.9010	0.9010	0.8760	0.8760	0.8760	0.8390	0.8390	0.8390	0.9650	0.9650	0.9650
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	77	108	156	110	1	6	367	82	192	423	195
Total Analysis Volume [veh/h]	154	306	432	624	442	6	23	1466	329	770	1690	778
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	10	27	0	27	44	0	10	39	0	27	56	56
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	0	0	0	33	0	0	28	0	0	22	22
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	6	20	20	20	23	37	37	3	38	38	23	58	85
g / C, Green / Cycle	0.05	0.16	0.16	0.16	0.19	0.31	0.31	0.03	0.32	0.32	0.19	0.48	0.71
(v / s)_i Volume / Saturation Flow Rate	0.04	0.14	0.12	0.12	0.18	0.12	0.12	0.01	0.24	0.23	0.22	0.30	0.41
s, saturation flow rate [veh/h]	3500	1900	1900	1900	3500	1900	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	178	312	312	312	671	580	580	97	1819	606	671	2754	1346
d1, Uniform Delay [s]	56.58	48.94	47.90	47.75	47.72	32.87	32.85	57.13	36.51	36.21	48.52	22.79	8.65
k, delay calibration	0.11	0.14	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.90	9.10	3.76	3.46	6.37	0.42	0.42	1.24	2.82	7.40	70.42	1.03	1.82
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.87	0.87	0.76	0.74	0.93	0.39	0.39	0.24	0.75	0.73	1.15	0.61	0.58
d, Delay for Lane Group [s/veh]	68.48	58.04	51.66	51.21	54.09	33.30	33.27	58.37	39.34	43.61	118.94	23.82	10.47
Lane Group LOS	E	E	D	D	D	C	C	E	D	D	F	C	B
Critical Lane Group	No	Yes	No	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.61	8.70	7.06	6.86	9.73	5.23	5.20	0.36	12.22	12.58	16.56	11.74	9.67
50th-Percentile Queue Length [ft/ln]	65.29	217.3	176.4	171.6	243.28	130.77	130.08	8.97	305.46	314.54	414.00	293.42	241.76
95th-Percentile Queue Length [veh/ln]	4.70	13.53	11.42	11.16	14.85	8.98	8.94	0.65	17.95	18.40	24.89	17.36	14.77
95th-Percentile Queue Length [ft/ln]	117.5	338.2	285.4	279.0	371.17	224.55	223.60	16.15	448.78	459.97	622.17	433.88	369.26

Movement, Approach, & Intersection Results

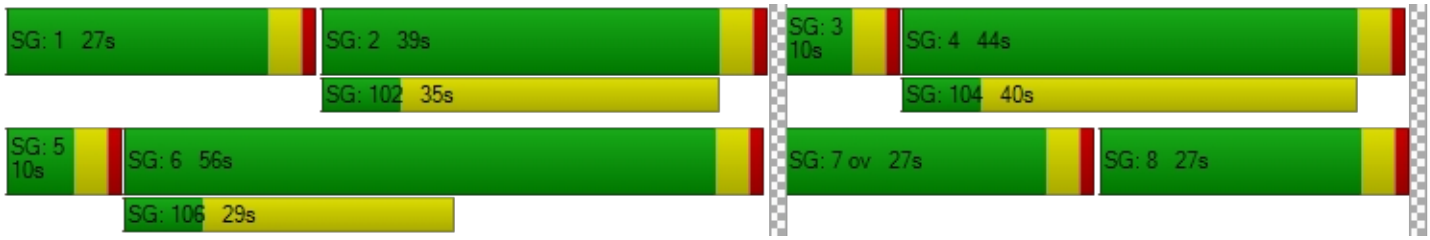
d_M, Delay for Movement [s/veh]	68.48	57.31	51.40	54.09	33.28	33.27	58.37	39.66	43.61	118.94	23.82	10.47
Movement LOS	E	E	D	D	C	C	E	D	D	F	C	B
d_A, Approach Delay [s/veh]	56.39			45.39			40.61			43.23		
Approach LOS	E			D			D			D		
d_I, Intersection Delay [s/veh]	44.56											
Intersection LOS	D											
Intersection V/C	0.899											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.52	49.52	49.52	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.947	2.821	3.260	0.000
Crosswalk LOS	C	C	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	383	666	583	866
d_b, Bicycle Delay [s]	39.22	26.68	30.12	19.28
l_b,int, Bicycle LOS Score for Intersection	2.296	2.444	2.310	3.341
Bicycle LOS	B	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: SR-57 SB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	26.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.801

Intersection Setup

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	0	0	0	837	0	1247	0	1571	580	199	1876	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	837	0	1247	0	1571	580	199	1876	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9460	1.0000	0.9460	1.0000	0.9230	0.9230	0.9510	0.9510	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	221	0	330	0	426	157	52	493	0
Total Analysis Volume [veh/h]	0	0	0	885	0	1318	0	1702	628	209	1973	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	7	0	0	0	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	6	0	0	0	6	0	6	6	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	57	0	0	0	31	0	12	43	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	12	0	0	20	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall				No				No		No	No	
Maximum Recall				No				No		No	No	
Pedestrian Recall				No				No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	R	C	R	L	C
C, Cycle Length [s]		100	100	100	100	100	100
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		43	43	37	37	8	49
g / C, Green / Cycle		0.43	0.43	0.37	0.37	0.08	0.49
(v / s)_i Volume / Saturation Flow Rate		0.25	0.35	0.30	0.17	0.06	0.35
s, saturation flow rate [veh/h]		3500	3800	5700	3800	3500	5700
c, Capacity [veh/h]		1508	1637	2110	1407	276	2788
d1, Uniform Delay [s]		21.68	24.80	28.28	23.76	45.11	19.96
k, delay calibration		0.11	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.37	0.97	3.43	1.03	4.20	1.54
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.59	0.80	0.81	0.45	0.76	0.71
d, Delay for Lane Group [s/veh]		22.04	25.77	31.71	24.79	49.32	21.50
Lane Group LOS		C	C	C	C	D	C
Critical Lane Group		No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]		7.73	13.26	12.48	5.69	2.69	11.77
50th-Percentile Queue Length [ft/ln]		193.29	331.53	312.03	142.36	67.13	294.30
95th-Percentile Queue Length [veh/ln]		12.29	19.23	18.28	9.61	4.83	17.40
95th-Percentile Queue Length [ft/ln]		307.29	480.84	456.88	240.19	120.83	434.98

Movement, Approach, & Intersection Results

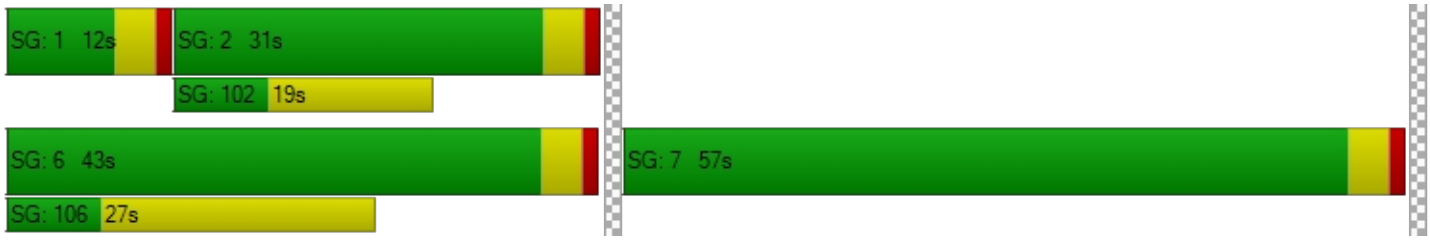
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	22.04	0.00	25.77	0.00	31.71	24.79	49.32	21.50	0.00
Movement LOS				C		C		C	C	D	C	
d_A, Approach Delay [s/veh]	0.00			24.27			29.84			24.17		
Approach LOS	A			C			C			C		
d_I, Intersection Delay [s/veh]	26.17											
Intersection LOS	C											
Intersection V/C	0.801											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	39.61	39.61	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.128	2.673	0.000	0.000
Crosswalk LOS	B	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1060	540	780
d_b, Bicycle Delay [s]	50.00	11.05	26.65	18.61
l_b,int, Bicycle LOS Score for Intersection	4.132	1.560	2.841	2.760
Bicycle LOS	D	A	C	C

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: SR-57 NB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	19.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.773

Intersection Setup

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			No			No			No		

Volumes

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	1104	0	467	0	0	0	0	1695	716	0	970	425
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1104	0	467	0	0	0	0	1695	716	0	970	425
Peak Hour Factor	0.9860	1.0000	0.9860	1.0000	1.0000	1.0000	0.9710	0.9080	0.9080	1.0000	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	280	0	118	0	0	0	0	467	197	0	258	0
Total Analysis Volume [veh/h]	1120	0	474	0	0	0	0	1867	789	0	1032	0
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Permiss	Split	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna
Signal Group	3	0	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	0	0	0	0	0	0	6	0	0	6	0
Maximum Green [s]	30	0	0	0	0	0	0	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	54	0	0	0	0	0	0	36	0	0	36	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	25	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R		C	C	R	C
C, Cycle Length [s]	90	90		90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	34	34		48	48	48	48
g / C, Green / Cycle	0.38	0.38		0.53	0.53	0.53	0.53
(v / s)_i Volume / Saturation Flow Rate	0.32	0.25		0.35	0.35	0.35	0.18
s, saturation flow rate [veh/h]	3500	1900		3800	1900	1900	5700
c, Capacity [veh/h]	1319	716		2030	1015	1015	3045
d1, Uniform Delay [s]	25.65	23.24		14.99	14.99	14.99	11.90
k, delay calibration	0.11	0.11		0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.62	1.06		1.66	3.29	3.29	0.30
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.66		0.65	0.65	0.65	0.34
d, Delay for Lane Group [s/veh]	27.27	24.30		16.65	18.27	18.27	12.21
Lane Group LOS	C	C		B	B	B	B
Critical Lane Group	Yes	No		Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	10.73	8.21		9.41	9.87	9.87	3.77
50th-Percentile Queue Length [ft/ln]	268.20	205.24		235.34	246.80	246.80	94.17
95th-Percentile Queue Length [veh/ln]	16.10	12.91		14.45	15.02	15.02	6.78
95th-Percentile Queue Length [ft/ln]	402.49	322.71		361.13	375.62	375.62	169.50

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	27.27	0.00	24.30	0.00	0.00	0.00	0.00	16.73	18.27	0.00	12.21	0.00
Movement LOS	C		C					B	B		B	
d_A, Approach Delay [s/veh]	26.39			0.00			17.46			12.21		
Approach LOS	C			A			B			B		
d_I, Intersection Delay [s/veh]	19.13											
Intersection LOS	B											
Intersection V/C	0.773											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.63	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.764	0.000	0.000	0.000
Crosswalk LOS	C	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1112	0	712	712
d_b, Bicycle Delay [s]	8.86	44.96	18.65	18.65
l_b,int, Bicycle LOS Score for Intersection	1.560	4.132	3.020	2.127
Bicycle LOS	A	D	C	B

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 4: Randolph Avenue at Birch Street

Control Type:	Signalized	Delay (sec / veh):	19.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.512

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Base Volume Input [veh/h]	102	77	183	56	38	80	89	701	128	160	849	26
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	102	77	183	56	38	80	89	701	128	160	849	26
Peak Hour Factor	0.8630	0.8630	0.8630	0.7790	0.7790	0.7790	0.9320	0.9320	0.9320	0.9670	0.9670	0.9670
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	30	22	53	18	12	26	24	188	34	41	219	7
Total Analysis Volume [veh/h]	118	89	212	72	49	103	95	752	137	165	878	27
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	38	0	0	38	0	23	30	0	22	29	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	25	0	0	19	0	0	18	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	13	13	13	13	6	55	55	10	59	59
g / C, Green / Cycle	0.14	0.14	0.14	0.14	0.14	0.07	0.61	0.61	0.11	0.66	0.66
(v / s)_i Volume / Saturation Flow Rate	0.07	0.05	0.11	0.04	0.08	0.05	0.24	0.23	0.09	0.23	0.01
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1800	1900	1900	1800	3800	1900
c, Capacity [veh/h]	169	268	268	227	268	126	1163	1163	204	2490	1245
d1, Uniform Delay [s]	35.55	34.85	37.39	34.60	36.11	41.11	8.93	8.78	38.97	6.96	5.43
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.09	0.72	5.16	0.80	1.87	8.62	1.00	0.91	7.36	0.39	0.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.70	0.33	0.79	0.32	0.57	0.75	0.39	0.37	0.81	0.35	0.02
d, Delay for Lane Group [s/veh]	40.63	35.57	42.55	35.40	37.98	49.73	9.92	9.69	46.33	7.35	5.46
Lane Group LOS	D	D	D	D	D	D	A	A	D	A	A
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.59	1.79	4.83	1.45	3.21	2.35	4.40	4.10	3.92	3.39	0.17
50th-Percentile Queue Length [ft/ln]	64.73	44.77	120.63	36.14	80.35	58.71	110.12	102.45	98.11	84.82	4.18
95th-Percentile Queue Length [veh/ln]	4.66	3.22	8.43	2.60	5.79	4.23	7.85	7.38	7.06	6.11	0.30
95th-Percentile Queue Length [ft/ln]	116.51	80.59	210.70	65.06	144.63	105.67	196.17	184.41	176.60	152.68	7.53

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.63	35.57	42.55	35.40	37.98	37.98	49.73	9.83	9.69	46.33	7.35	5.46
Movement LOS	D	D	D	D	D	D	D	A	A	D	A	A
d_A, Approach Delay [s/veh]	40.53			37.15			13.67			13.32		
Approach LOS	D			D			B			B		
d_I, Intersection Delay [s/veh]	19.65											
Intersection LOS	B											
Intersection V/C	0.512											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.70	34.70	34.70	34.70
l_p,int, Pedestrian LOS Score for Intersection	2.318	2.081	2.873	2.897
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	755	755	577	555
d_b, Bicycle Delay [s]	17.44	17.44	22.78	23.49
l_b,int, Bicycle LOS Score for Intersection	2.251	1.929	2.371	2.442
Bicycle LOS	B	A	B	B

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 5: State College Boulevard at Birch Street

Control Type:	Signalized	Delay (sec / veh):	41.3
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.795

Intersection Setup

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Base Volume Input [veh/h]	130	324	183	287	614	506	306	783	171	171	752	257
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	130	324	183	287	614	506	306	783	171	171	752	257
Peak Hour Factor	0.9440	0.9440	0.9440	0.9150	0.9150	0.9150	0.9030	0.9030	0.9030	0.9260	0.9260	0.9260
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	86	48	78	168	138	85	217	47	46	203	69
Total Analysis Volume [veh/h]	138	343	194	314	671	553	339	867	189	185	812	278
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	10	39	0	27	56	0	17	42	0	12	37	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	28	0	0	30	0	0	28	0	0	26	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	37	37	13	44	44	13	46	46	8	41	41
g / C, Green / Cycle	0.05	0.31	0.31	0.11	0.37	0.37	0.11	0.38	0.38	0.07	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.04	0.09	0.10	0.09	0.34	0.31	0.10	0.23	0.10	0.05	0.21	0.15
s, saturation flow rate [veh/h]	3500	3800	1900	3500	1900	1900	3500	3800	1900	3500	3800	1900
c, Capacity [veh/h]	176	1165	582	386	696	696	380	1455	728	235	1297	649
d1, Uniform Delay [s]	56.34	31.73	32.15	52.20	36.47	34.68	52.80	29.60	25.37	55.16	33.10	30.49
k, delay calibration	0.11	0.11	0.11	0.11	0.31	0.25	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.39	0.14	0.33	4.21	14.00	5.94	7.34	1.80	0.87	5.84	2.29	2.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.78	0.29	0.33	0.81	0.93	0.83	0.89	0.60	0.26	0.79	0.63	0.43
d, Delay for Lane Group [s/veh]	63.73	31.87	32.48	56.41	50.47	40.62	60.15	31.41	26.24	60.99	35.39	32.56
Lane Group LOS	E	C	C	E	D	D	E	C	C	E	D	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.25	3.84	4.42	4.84	20.48	16.36	5.42	10.30	3.89	2.95	10.26	6.58
50th-Percentile Queue Length [ft/ln]	56.21	95.89	110.61	121.12	512.05	408.89	135.61	257.42	97.16	73.67	256.49	164.56
95th-Percentile Queue Length [veh/ln]	4.05	6.90	7.87	8.45	27.90	22.99	9.24	15.56	7.00	5.30	15.51	10.79
95th-Percentile Queue Length [ft/ln]	101.17	172.61	196.85	211.37	697.61	574.70	231.10	388.98	174.89	132.60	387.82	269.75

Movement, Approach, & Intersection Results

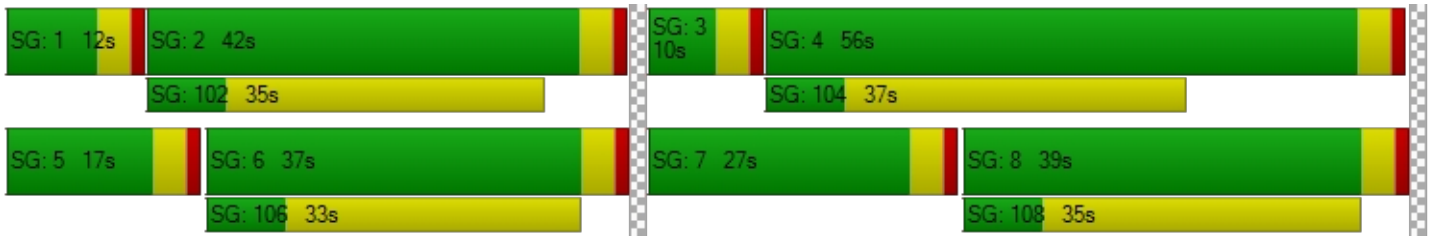
d_M, Delay for Movement [s/veh]	63.73	31.87	32.48	56.41	50.08	40.62	60.15	31.41	26.24	60.99	35.39	32.56
Movement LOS	E	C	C	E	D	D	E	C	C	E	D	C
d_A, Approach Delay [s/veh]	38.56			47.97			37.69			38.49		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	41.26											
Intersection LOS	D											
Intersection V/C	0.795											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.51	49.51	49.51	49.51
l_p,int, Pedestrian LOS Score for Intersection	2.847	2.873	3.011	2.977
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	583	867	633	550
d_b, Bicycle Delay [s]	30.11	19.27	28.02	31.54
l_b,int, Bicycle LOS Score for Intersection	2.116	2.828	2.710	2.611
Bicycle LOS	B	C	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: S Associated Road at Birch Street

Control Type:	Signalized	Delay (sec / veh):	21.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.608

Intersection Setup

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Base Volume Input [veh/h]	341	20	166	12	22	16	10	814	353	148	806	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	341	20	166	12	22	16	10	814	353	148	806	14
Peak Hour Factor	0.9600	0.9600	0.9600	0.7170	0.7170	0.7170	0.9350	0.9350	0.9350	0.9260	0.9260	0.9260
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	89	5	43	4	8	6	3	218	94	40	218	4
Total Analysis Volume [veh/h]	355	21	173	17	31	22	11	871	378	160	870	15
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	8	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups			1,8									
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	6	0	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	30	0	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	24	61	61	0	37	0	10	38	0	11	39	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	26	26	0	26	0	0	27	0	0	26	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No		No		No	No		No	No	
Maximum Recall	No	No	No		No		No	No		No	No	
Pedestrian Recall	No	No	No		No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	C
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	23	34	5	5	2	68	68	7	73	73
g / C, Green / Cycle	0.12	0.21	0.31	0.05	0.05	0.02	0.62	0.62	0.06	0.67	0.67
(v / s)_i Volume / Saturation Flow Rate	0.10	0.01	0.09	0.01	0.03	0.01	0.34	0.31	0.05	0.23	0.23
s, saturation flow rate [veh/h]	3500	1900	1900	1800	1900	1800	1900	1900	3500	1900	1900
c, Capacity [veh/h]	431	396	586	108	92	29	1176	1176	224	1267	1267
d1, Uniform Delay [s]	47.07	34.89	28.95	50.28	51.24	53.59	12.20	11.63	50.52	7.98	7.96
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.99	0.06	0.28	0.68	5.52	7.97	1.91	1.55	4.20	0.76	0.76
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.82	0.05	0.30	0.16	0.57	0.38	0.56	0.51	0.71	0.35	0.35
d, Delay for Lane Group [s/veh]	51.07	34.94	29.22	50.96	56.76	61.56	14.11	13.19	54.71	8.74	8.72
Lane Group LOS	D	C	C	D	E	E	B	B	D	A	A
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.96	0.46	3.52	0.47	1.57	0.37	9.37	8.07	2.29	4.49	4.45
50th-Percentile Queue Length [ft/ln]	124.09	11.47	88.05	11.75	39.25	9.13	234.22	201.74	57.19	112.17	111.30
95th-Percentile Queue Length [veh/ln]	8.62	0.83	6.34	0.85	2.83	0.66	14.39	12.73	4.12	7.96	7.91
95th-Percentile Queue Length [ft/ln]	215.44	20.65	158.48	21.15	70.65	16.43	359.71	318.21	102.94	199.02	197.80

Movement, Approach, & Intersection Results

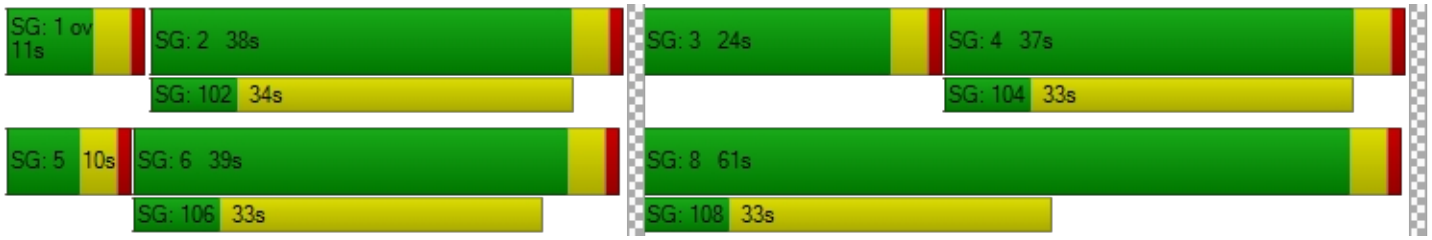
d_M, Delay for Movement [s/veh]	51.07	34.94	29.22	50.96	56.76	56.76	61.56	13.88	13.19	54.71	8.73	8.72
Movement LOS	D	C	C	D	E	E	E	B	B	D	A	A
d_A, Approach Delay [s/veh]	43.57			55.35			14.09			15.77		
Approach LOS	D			E			B			B		
d_I, Intersection Delay [s/veh]	21.21											
Intersection LOS	C											
Intersection V/C	0.608											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	44.56	44.56	44.56	44.56
l_p,int, Pedestrian LOS Score for Intersection	2.644	1.988	2.798	2.829
Crosswalk LOS	B	A	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1036	600	618	636
d_b, Bicycle Delay [s]	12.78	26.96	26.27	25.58
l_b,int, Bicycle LOS Score for Intersection	2.465	1.675	2.599	2.422
Bicycle LOS	B	A	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 7: Randolph Avenue at Madison Way

Control Type:	Signalized	Delay (sec / veh):	20.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.257

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Base Volume Input [veh/h]	22	291	115	72	276	24	38	11	60	83	4	59
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	22	291	115	72	276	24	38	11	60	83	4	59
Peak Hour Factor	0.9200	0.9200	0.9200	0.9030	0.9030	0.9030	0.6380	0.6380	0.6380	0.9310	0.9310	0.9310
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	79	31	20	76	7	15	4	24	22	1	16
Total Analysis Volume [veh/h]	24	316	125	80	306	27	60	17	94	89	4	63
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	6	6	0	6	6	0	0	6	0	0	6	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	26	0	10	26	0	0	54	0	0	54	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	15	0	0	12	0	0	19	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	65	65	5	68	68	7	7	7	7
g / C, Green / Cycle	0.03	0.73	0.73	0.06	0.75	0.75	0.08	0.08	0.08	0.08
(v / s)_i Volume / Saturation Flow Rate	0.01	0.12	0.11	0.04	0.09	0.09	0.03	0.06	0.05	0.04
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1900	1800	1900	1800	1900
c, Capacity [veh/h]	56	1378	1378	106	1430	1430	135	157	93	157
d1, Uniform Delay [s]	42.82	3.87	3.83	41.74	3.02	3.02	39.18	40.23	39.85	39.26
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.01	0.26	0.24	10.43	0.17	0.16	2.28	5.68	32.81	1.82
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.43	0.17	0.15	0.76	0.12	0.12	0.44	0.71	0.95	0.43
d, Delay for Lane Group [s/veh]	47.83	4.13	4.07	52.17	3.19	3.18	41.46	45.90	72.66	41.08
Lane Group LOS	D	A	A	D	A	A	D	D	E	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.60	1.13	1.04	2.04	0.67	0.66	1.33	2.61	2.73	1.47
50th-Percentile Queue Length [ft/ln]	14.95	28.24	26.00	50.92	16.78	16.43	33.27	65.33	68.26	36.82
95th-Percentile Queue Length [veh/ln]	1.08	2.03	1.87	3.67	1.21	1.18	2.40	4.70	4.91	2.65
95th-Percentile Queue Length [ft/ln]	26.91	50.83	46.79	91.65	30.20	29.57	59.88	117.59	122.86	66.28

Movement, Approach, & Intersection Results

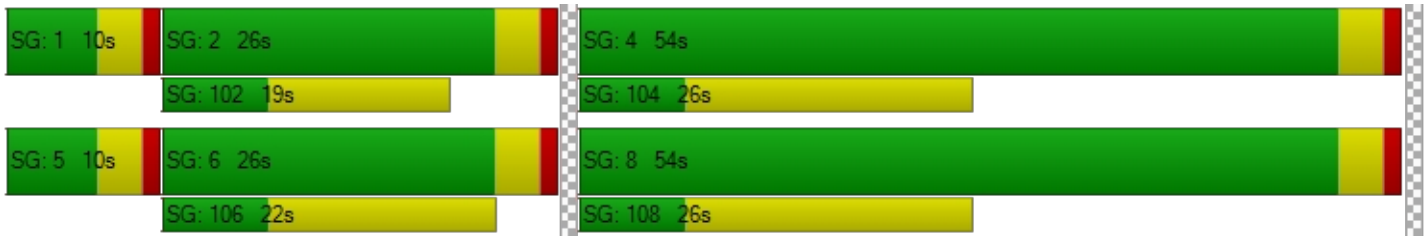
d_M, Delay for Movement [s/veh]	47.83	4.11	4.07	52.17	3.19	3.18	41.46	45.90	45.90	72.66	41.08	41.08
Movement LOS	D	A	A	D	A	A	D	D	D	E	D	D
d_A, Approach Delay [s/veh]	6.35			12.68			44.35			59.10		
Approach LOS	A			B			D			E		
d_I, Intersection Delay [s/veh]	20.74											
Intersection LOS	C											
Intersection V/C	0.257											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	34.68	34.68
l_p,int, Pedestrian LOS Score for Intersection	2.612	2.551	2.013	2.063
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	489	489	1111	1111
d_b, Bicycle Delay [s]	25.70	25.70	8.90	8.90
l_b,int, Bicycle LOS Score for Intersection	1.943	1.900	1.842	1.817
Bicycle LOS	A	A	A	A

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 8: Randolph Avenue at Brea Mall

Control Type:	Signalized	Delay (sec / veh):	23.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.486

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Base Volume Input [veh/h]	23	352	431	43	320	22	25	15	27	395	6	78
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	352	431	43	320	22	25	15	27	395	6	78
Peak Hour Factor	0.9560	0.9560	0.9560	0.8510	0.8510	0.8510	0.8970	0.8970	0.8970	0.8690	0.8690	0.8690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	92	113	13	94	6	7	4	8	114	2	22
Total Analysis Volume [veh/h]	24	368	451	51	376	26	28	17	30	455	7	90
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	6	6	0	6	6	0	0	6	0	0	6	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	28	0	11	29	0	0	30	0	0	36	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	17	0	0	18	0	0	19	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	R	L	C
C, Cycle Length [s]	105	105	105	105	105	105	105	105	105	105
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	69	60	60	69	61	61	5	5	19	19
g / C, Green / Cycle	0.65	0.57	0.57	0.65	0.58	0.58	0.05	0.05	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.01	0.19	0.24	0.03	0.11	0.10	0.03	0.02	0.16	0.14
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1900	1800	1900	1800	1900
c, Capacity [veh/h]	1171	1079	1079	1013	1108	1108	93	98	329	347
d1, Uniform Delay [s]	6.48	12.17	12.87	6.58	10.21	10.19	48.48	48.02	41.59	40.93
k, delay calibration	0.11	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.01	0.86	1.19	0.09	0.36	0.36	3.85	1.73	6.31	3.81
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.02	0.34	0.42	0.05	0.18	0.18	0.48	0.31	0.85	0.78
d, Delay for Lane Group [s/veh]	6.49	13.03	14.06	6.67	10.58	10.55	52.33	49.76	47.90	44.74
Lane Group LOS	A	B	B	A	B	B	D	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.18	4.68	6.09	0.41	2.21	2.17	1.24	0.80	7.57	6.99
50th-Percentile Queue Length [ft/ln]	4.48	116.99	152.17	10.20	55.18	54.18	31.11	20.08	189.14	174.81
95th-Percentile Queue Length [veh/ln]	0.32	8.23	10.13	0.73	3.97	3.90	2.24	1.45	12.08	11.33
95th-Percentile Queue Length [ft/ln]	8.06	205.68	253.32	18.37	99.33	97.52	55.99	36.15	301.91	283.22

Movement, Approach, & Intersection Results

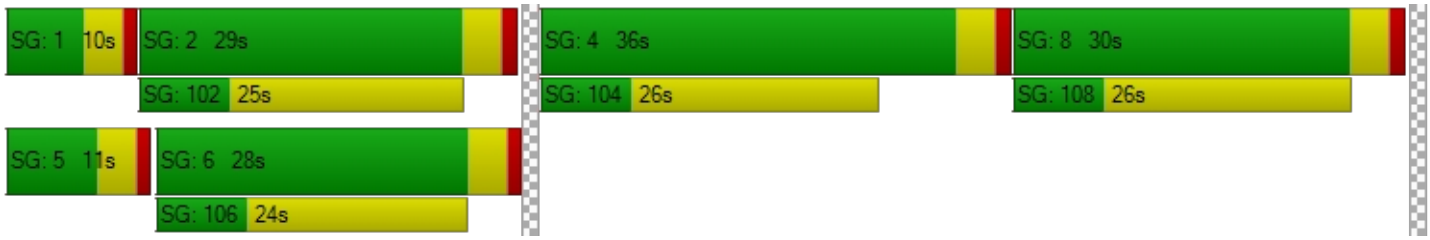
d_M, Delay for Movement [s/veh]	6.49	13.03	14.06	6.67	10.57	10.55	52.33	52.33	49.76	46.69	44.74	44.74
Movement LOS	A	B	B	A	B	B	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	13.39			10.13			51.30			46.35		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	23.56											
Intersection LOS	C											
Intersection V/C	0.486											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	42.11	42.11	42.11	42.11
l_p,int, Pedestrian LOS Score for Intersection	2.639	2.490	2.011	2.338
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	457	476	495	609
d_b, Bicycle Delay [s]	31.27	30.50	29.75	25.40
l_b,int, Bicycle LOS Score for Intersection	2.255	1.933	1.683	2.470
Bicycle LOS	B	A	A	B

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 9: Brea Mall South at State College Boulevard

Control Type:	Signalized	Delay (sec / veh):	32.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.829

Intersection Setup

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Base Volume Input [veh/h]	175	32	94	62	28	529	677	407	30	89	642	36
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	175	32	94	62	28	529	677	407	30	89	642	36
Peak Hour Factor	0.8300	0.8300	0.8300	0.8970	0.8970	0.8970	0.9440	0.9440	0.9440	0.8860	0.8860	0.8860
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	53	10	28	17	8	147	179	108	8	25	181	10
Total Analysis Volume [veh/h]	211	39	113	69	31	590	717	431	32	100	725	41
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	4	5	2	0	1	6	0
Auxiliary Signal Groups						4,5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	6	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	30	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	37	0	0	12	12	39	31	0	40	32	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	26	0	0	0	0	0	20	0	0	21	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No	No	No	No		No	No	
Maximum Recall		No			No	No	No	No		No	No	
Pedestrian Recall		No			No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	C	C	R	L	C	C	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	13	13	8	8	60	31	75	75	8	52	52
g / C, Green / Cycle	0.11	0.11	0.11	0.07	0.07	0.50	0.26	0.62	0.62	0.07	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.05	0.09	0.06	0.04	0.02	0.31	0.20	0.12	0.12	0.06	0.20	0.20
s, saturation flow rate [veh/h]	1800	1800	1900	1800	1900	1900	3500	1900	1900	1800	1900	1900
c, Capacity [veh/h]	223	242	200	121	128	951	913	1184	1184	128	823	823
d1, Uniform Delay [s]	50.71	52.56	51.07	54.30	53.08	21.73	41.24	9.73	9.70	54.86	24.23	24.12
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.29	2.81	2.48	4.15	0.97	3.04	1.53	0.37	0.36	9.95	1.92	1.86
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.43	0.64	0.56	0.57	0.24	0.62	0.79	0.20	0.19	0.78	0.47	0.46
d, Delay for Lane Group [s/veh]	52.00	55.37	53.55	58.45	54.05	24.78	42.77	10.11	10.07	64.81	26.15	25.97
Lane Group LOS	D	E	D	E	D	C	D	B	B	E	C	C
Critical Lane Group	No	Yes	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.78	4.76	3.37	2.16	0.92	12.59	10.00	2.71	2.64	3.33	8.22	8.02
50th-Percentile Queue Length [ft/ln]	69.45	118.94	84.32	54.12	23.10	314.67	250.12	67.75	65.97	83.22	205.43	200.57
95th-Percentile Queue Length [veh/ln]	5.00	8.33	6.07	3.90	1.66	18.41	15.19	4.88	4.75	5.99	12.92	12.67
95th-Percentile Queue Length [ft/ln]	125.01	208.37	151.78	97.42	41.57	460.13	379.80	121.95	118.74	149.79	322.96	316.70

Movement, Approach, & Intersection Results

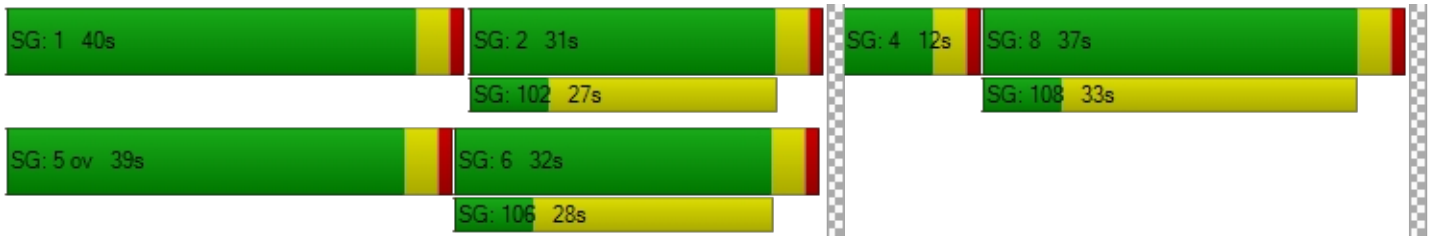
d_M, Delay for Movement [s/veh]	53.78	55.37	53.55	58.45	54.05	24.78	42.77	10.09	10.07	64.81	26.07	25.97
Movement LOS	D	E	D	E	D	C	D	B	B	E	C	C
d_A, Approach Delay [s/veh]	53.92			29.46			29.95			30.54		
Approach LOS	D			C			C			C		
d_I, Intersection Delay [s/veh]	32.81											
Intersection LOS	C											
Intersection V/C	0.829											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.52	49.52	0.00	49.52
l_p,int, Pedestrian LOS Score for Intersection	2.416	2.604	0.000	2.602
Crosswalk LOS	B	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	550	133	450	467
d_b, Bicycle Delay [s]	31.55	52.28	36.05	35.28
l_b,int, Bicycle LOS Score for Intersection	2.159	2.129	2.533	2.274
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 10: Harbor Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	39.9
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.757

Intersection Setup

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	357	800	192	234	827	303	353	1216	283	350	1314	220
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	357	800	192	234	827	303	353	1216	283	350	1314	220
Peak Hour Factor	0.9070	0.9070	0.9070	0.9640	0.9640	0.9640	0.9710	0.9710	0.9710	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	98	221	53	61	214	79	91	313	73	91	342	57
Total Analysis Volume [veh/h]	394	882	212	243	858	314	364	1252	291	365	1369	229
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	20	45	0	14	39	0	19	42	0	19	42	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	31	0	0	28	0	0	31	0	0	29	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	30	30	10	24	24	14	50	50	14	50	50
g / C, Green / Cycle	0.13	0.25	0.25	0.08	0.20	0.20	0.12	0.41	0.41	0.12	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate	0.11	0.15	0.11	0.07	0.15	0.17	0.10	0.27	0.26	0.10	0.24	0.12
s, saturation flow rate [veh/h]	3500	5700	1900	3500	5700	1900	3500	3800	1900	3500	5700	1900
c, Capacity [veh/h]	452	1410	470	296	1157	386	422	1573	787	423	2361	787
d1, Uniform Delay [s]	51.34	40.24	38.29	54.09	44.91	45.71	51.84	28.42	28.01	51.83	27.12	23.43
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.13	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.39	0.46	0.68	5.64	0.96	5.10	5.33	2.21	3.92	5.34	1.05	0.94
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.87	0.63	0.45	0.82	0.74	0.81	0.86	0.66	0.64	0.86	0.58	0.29
d, Delay for Lane Group [s/veh]	56.73	40.70	38.96	59.73	45.87	50.81	57.17	30.63	31.93	57.17	28.17	24.37
Lane Group LOS	E	D	D	E	D	D	E	C	C	E	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	6.15	7.79	5.39	3.84	8.08	9.46	5.69	12.42	12.17	5.70	10.21	4.53
50th-Percentile Queue Length [ft/ln]	153.73	194.63	134.71	96.10	202.04	236.54	142.17	310.60	304.15	142.58	255.28	113.31
95th-Percentile Queue Length [veh/ln]	10.22	12.36	9.20	6.92	12.74	14.51	9.60	18.20	17.89	9.62	15.45	8.02
95th-Percentile Queue Length [ft/ln]	255.40	309.03	229.89	172.99	318.60	362.66	239.95	455.11	447.16	240.49	386.30	200.60

Movement, Approach, & Intersection Results

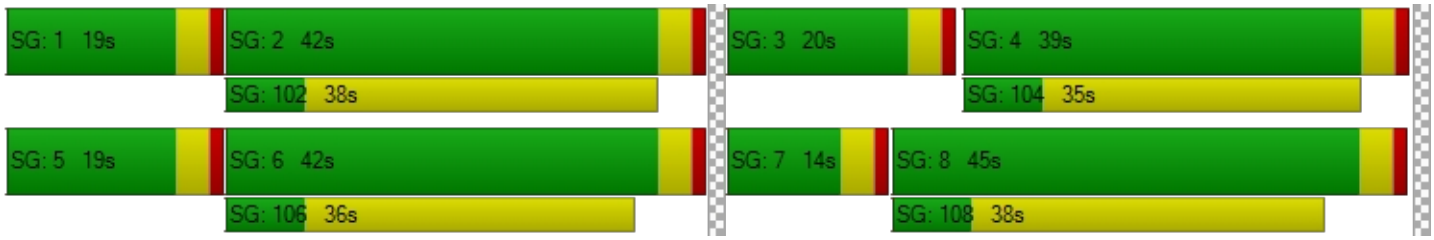
d_M, Delay for Movement [s/veh]	56.73	40.70	38.96	59.73	45.87	50.81	57.17	30.85	31.93	57.17	28.17	24.37
Movement LOS	E	D	D	E	D	D	E	C	C	E	C	C
d_A, Approach Delay [s/veh]	44.70			49.35			36.04			33.12		
Approach LOS	D			D			D			C		
d_I, Intersection Delay [s/veh]	39.88											
Intersection LOS	D											
Intersection V/C	0.757											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.54	49.54	49.54	49.54
l_p,int, Pedestrian LOS Score for Intersection	3.188	3.176	3.225	3.261
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	683	583	633	633
d_b, Bicycle Delay [s]	26.03	30.13	28.04	28.04
l_b,int, Bicycle LOS Score for Intersection	2.378	2.338	2.608	2.639
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 11: Puente Street at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	14.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.512

Intersection Setup

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	27	31	97	164	44	128	82	1392	37	80	1451	189
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	27	31	97	164	44	128	82	1392	37	80	1451	189
Peak Hour Factor	0.8200	0.8200	0.8200	0.7710	0.7710	0.7710	0.9890	0.9890	0.9890	0.9120	0.9120	0.9120
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	9	30	53	14	42	21	352	9	22	398	52
Total Analysis Volume [veh/h]	33	38	118	213	57	166	83	1407	37	88	1591	207
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	40	0	0	40	0	10	37	0	13	40	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	23	0	0	17	0	0	23	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	13	13	13	13	13	5	59	59	6	59	59
g / C, Green / Cycle	0.15	0.15	0.15	0.15	0.15	0.15	0.06	0.66	0.66	0.06	0.66	0.66
(v / s)_i Volume / Saturation Flow Rate	0.02	0.02	0.06	0.12	0.02	0.09	0.05	0.25	0.26	0.05	0.28	0.11
s, saturation flow rate [veh/h]	1800	1900	1900	1800	3800	1900	1800	3800	1900	1800	5700	1900
c, Capacity [veh/h]	289	280	280	281	559	280	110	2489	1244	117	3754	1251
d1, Uniform Delay [s]	33.38	33.44	34.94	37.16	33.27	35.90	41.62	7.16	7.24	41.43	7.29	5.90
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.17	0.22	1.01	4.18	0.08	2.01	9.93	0.45	0.95	9.45	0.35	0.28
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.11	0.14	0.42	0.76	0.10	0.59	0.75	0.38	0.40	0.75	0.42	0.17
d, Delay for Lane Group [s/veh]	33.55	33.65	35.95	41.35	33.34	37.91	51.56	7.60	8.19	50.88	7.64	6.18
Lane Group LOS	C	C	D	D	C	D	D	A	A	D	A	A
Critical Lane Group	No	No	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.63	0.73	2.40	4.79	0.54	3.51	2.10	3.78	4.13	2.21	4.26	1.41
50th-Percentile Queue Length [ft/ln]	15.86	18.32	60.03	119.65	13.51	87.85	52.46	94.46	103.27	55.15	106.47	35.13
95th-Percentile Queue Length [veh/ln]	1.14	1.32	4.32	8.37	0.97	6.33	3.78	6.80	7.44	3.97	7.64	2.53
95th-Percentile Queue Length [ft/ln]	28.55	32.98	108.05	209.35	24.31	158.13	94.42	170.03	185.88	99.26	191.08	63.23

Movement, Approach, & Intersection Results

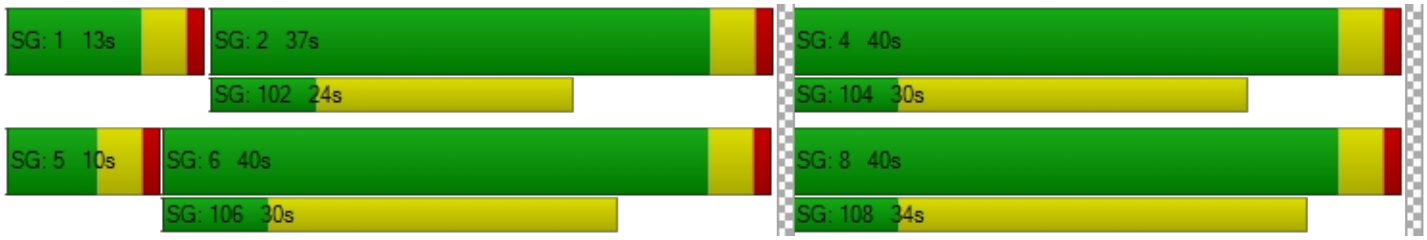
d_M, Delay for Movement [s/veh]	33.55	33.65	35.95	41.35	33.34	37.91	51.56	7.79	8.19	50.88	7.64	6.18
Movement LOS	C	C	D	D	C	D	D	A	A	D	A	A
d_A, Approach Delay [s/veh]	35.07			38.99			10.18			9.50		
Approach LOS	D			D			B			A		
d_I, Intersection Delay [s/veh]	14.14											
Intersection LOS	B											
Intersection V/C	0.512											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.70	34.70	34.70	34.70
l_p,int, Pedestrian LOS Score for Intersection	2.372	2.448	3.102	3.470
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	800	800	733	800
d_b, Bicycle Delay [s]	16.22	16.22	18.07	16.22
l_b,int, Bicycle LOS Score for Intersection	1.871	1.919	2.399	2.597
Bicycle LOS	A	A	B	B

Sequence

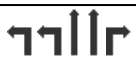
Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: Brea Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	48.1
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.920

Intersection Setup

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	437	574	287	467	933	253	274	1440	288	367	1400	414
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	437	574	287	467	933	253	274	1440	288	367	1400	414
Peak Hour Factor	0.9240	0.9240	0.9240	0.9170	0.9170	0.9170	0.9130	0.9130	0.9130	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	118	155	78	127	254	69	75	394	79	103	393	116
Total Analysis Volume [veh/h]	473	621	311	509	1017	276	300	1577	315	412	1573	465
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	21	41	0	21	41	0	15	41	0	17	43	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	30	0	0	28	0	0	30	0	0	30	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	17	35	35	17	35	35	11	39	39	13	41	41
g / C, Green / Cycle	0.14	0.29	0.29	0.14	0.29	0.29	0.09	0.33	0.33	0.11	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.14	0.11	0.16	0.15	0.27	0.15	0.09	0.28	0.17	0.12	0.28	0.24
s, saturation flow rate [veh/h]	3500	5700	1900	3500	3800	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	497	1651	550	497	1101	550	323	1859	620	381	1954	651
d1, Uniform Delay [s]	51.10	33.99	36.22	51.51	41.36	35.44	54.11	37.68	32.67	53.50	35.81	34.33
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.41	0.14	0.95	25.15	3.86	0.71	11.60	5.03	2.96	47.25	3.65	6.56
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.95	0.38	0.57	1.02	0.92	0.50	0.93	0.85	0.51	1.08	0.80	0.71
d, Delay for Lane Group [s/veh]	61.51	34.14	37.17	76.66	45.22	36.15	65.71	42.71	35.63	100.75	39.46	40.89
Lane Group LOS	E	C	D	F	D	D	E	D	D	F	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	7.75	4.85	7.87	9.19	15.02	6.82	5.01	15.10	7.91	8.24	14.44	12.90
50th-Percentile Queue Length [ft/ln]	193.86	121.24	196.84	229.72	375.49	170.48	125.35	377.48	197.63	205.88	361.05	322.59
95th-Percentile Queue Length [veh/ln]	12.32	8.46	12.48	14.31	21.38	11.10	8.69	21.47	12.52	13.34	20.67	18.79
95th-Percentile Queue Length [ft/ln]	308.03	211.54	311.88	357.83	534.39	277.55	217.16	536.80	312.90	333.61	516.86	469.87

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	61.51	34.14	37.17	76.66	45.22	36.15	65.71	42.71	35.63	100.75	39.46	40.89
Movement LOS	E	C	D	F	D	D	E	D	D	F	D	D
d_A, Approach Delay [s/veh]	44.02			52.71			44.84			50.04		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	48.12											
Intersection LOS	D											
Intersection V/C	0.920											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.52	49.52	49.52	49.52
l_p,int, Pedestrian LOS Score for Intersection	3.123	3.128	3.352	3.388
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	617	617	617	650
d_b, Bicycle Delay [s]	28.72	28.72	28.72	27.35
l_b,int, Bicycle LOS Score for Intersection	2.332	3.046	2.765	2.907
Bicycle LOS	B	C	C	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 13: Randolph Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	45.3
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.906

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	102	47	199	420	86	299	322	1626	65	142	1880	473
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	102	47	199	420	86	299	322	1626	65	142	1880	473
Peak Hour Factor	0.8250	0.8250	0.8250	0.9010	0.9010	0.9010	0.9400	0.9400	0.9400	0.9820	0.9820	0.9820
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	31	14	60	117	24	83	86	432	17	36	479	120
Total Analysis Volume [veh/h]	124	57	241	466	95	332	343	1730	69	145	1914	482
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	14	0	0	41	0	17	50	0	15	48	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	29	0	0	28	0	0	29	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	17	17	17	30	30	13	46	46	11	44	44
g / C, Green / Cycle	0.14	0.14	0.14	0.25	0.25	0.11	0.38	0.38	0.09	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.07	0.03	0.13	0.13	0.22	0.10	0.31	0.32	0.08	0.34	0.25
s, saturation flow rate [veh/h]	1800	1800	1900	3500	1900	3500	3800	1900	1800	5700	1900
c, Capacity [veh/h]	250	250	264	879	477	383	1459	729	167	2094	698
d1, Uniform Delay [s]	47.83	45.99	51.01	38.84	43.43	52.82	33.15	33.67	53.76	36.20	32.22
k, delay calibration	0.11	0.11	0.11	0.11	0.26	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.52	0.46	11.89	0.50	12.98	7.57	5.06	11.27	12.62	7.65	5.54
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.50	0.23	0.91	0.53	0.89	0.90	0.81	0.84	0.87	0.91	0.69
d, Delay for Lane Group [s/veh]	49.35	46.45	62.89	39.34	56.41	60.39	38.21	44.94	66.39	43.84	37.75
Lane Group LOS	D	D	E	D	E	E	D	D	E	D	D
Critical Lane Group	No	No	Yes	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.54	1.55	8.00	6.00	13.89	5.50	16.24	18.28	4.91	18.98	12.84
50th-Percentile Queue Length [ft/ln]	88.58	38.78	199.91	149.99	347.26	137.62	406.12	456.89	122.63	474.44	320.92
95th-Percentile Queue Length [veh/ln]	6.38	2.79	12.63	10.02	20.00	9.35	22.85	25.29	8.54	26.12	18.71
95th-Percentile Queue Length [ft/ln]	159.45	69.81	315.84	250.42	500.07	233.81	571.37	632.17	213.44	653.05	467.82

Movement, Approach, & Intersection Results

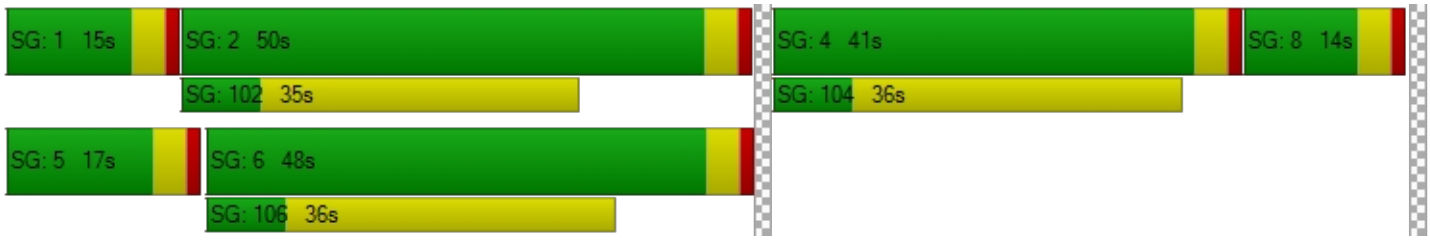
d_M, Delay for Movement [s/veh]	49.35	46.45	62.89	39.34	56.41	56.41	60.39	40.33	44.94	66.39	43.84	37.75
Movement LOS	D	D	E	D	E	E	E	D	D	E	D	D
d_A, Approach Delay [s/veh]	56.69			47.50			43.69			43.98		
Approach LOS	E			D			D			D		
d_I, Intersection Delay [s/veh]	45.29											
Intersection LOS	D											
Intersection V/C	0.906											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.54	49.54	49.54	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.323	2.660	3.289	0.000
Crosswalk LOS	B	B	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	167	616	766	733
d_b, Bicycle Delay [s]	50.45	28.73	22.84	24.09
l_b,int, Bicycle LOS Score for Intersection	1.908	3.033	2.738	2.957
Bicycle LOS	A	C	B	C

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 14: State College Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	148.2
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.348

Intersection Setup

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	326	554	607	595	421	186	139	1674	228	684	2074	973
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	326	554	607	595	421	186	139	1674	228	684	2074	973
Peak Hour Factor	0.9800	0.9800	0.9800	0.8330	0.8330	0.8330	0.9250	0.9250	0.9250	0.9230	0.9230	0.9230
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	83	141	155	179	126	56	38	452	62	185	562	264
Total Analysis Volume [veh/h]	333	565	619	714	505	223	150	1810	246	741	2247	1054
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	18	41	0	27	50	0	10	34	0	18	42	42
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	30	0	0	28	0	0	23	0	0	23	23
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	13	37	37	23	47	47	6	30	30	14	38	65
g / C, Green / Cycle	0.11	0.31	0.31	0.19	0.39	0.39	0.05	0.25	0.25	0.12	0.32	0.54
(v / s)_i Volume / Saturation Flow Rate	0.10	0.15	0.33	0.36	0.20	0.18	0.04	0.27	0.27	0.21	0.39	0.55
s, saturation flow rate [veh/h]	3500	3800	1900	2000	1900	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	389	1166	583	383	736	736	176	1432	477	409	1811	1031
d1, Uniform Delay [s]	52.40	33.87	41.60	48.51	28.13	27.58	56.54	44.94	44.94	53.00	40.95	27.44
k, delay calibration	0.11	0.11	0.50	0.24	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.48	0.31	54.71	392.72	0.56	0.48	10.83	45.70	68.25	367.12	113.23	33.72
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.86	0.48	1.06	1.86	0.51	0.47	0.85	1.07	1.09	1.81	1.24	1.02
d, Delay for Lane Group [s/veh]	57.88	34.18	96.31	441.23	28.69	28.06	67.37	90.64	113.19	420.12	154.17	61.16
Lane Group LOS	E	C	F	F	C	C	E	F	F	F	F	F
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.22	6.75	25.85	26.62	8.41	7.58	2.52	20.14	23.13	27.01	36.57	37.57
50th-Percentile Queue Length [ft/ln]	130.46	168.85	646.32	665.59	210.20	189.53	63.01	503.62	578.36	675.35	914.35	939.30
95th-Percentile Queue Length [veh/ln]	8.97	11.02	35.56	43.65	13.16	12.10	4.54	28.66	32.68	42.75	52.96	48.52
95th-Percentile Queue Length [ft/ln]	224.13	275.41	889.12	1091.37	329.08	302.42	113.41	716.57	816.90	1068.72	1323.92	1212.96

Movement, Approach, & Intersection Results

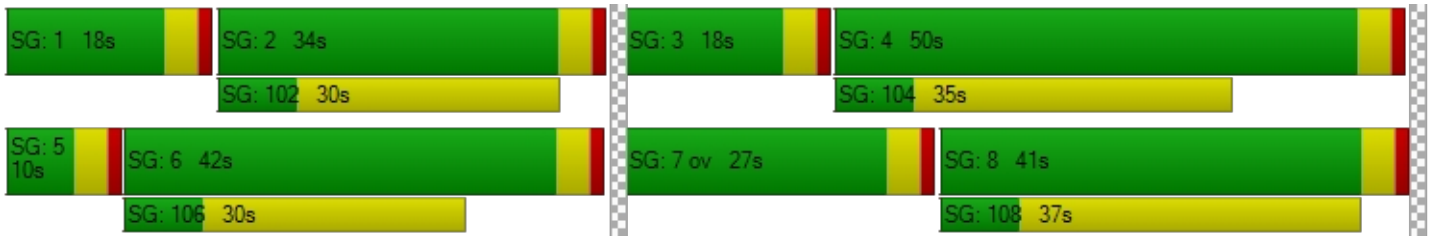
d_M, Delay for Movement [s/veh]	57.88	34.18	96.31	441.23	28.53	28.06	67.37	94.07	113.19	420.12	154.17	61.16
Movement LOS	E	C	F	F	C	C	E	F	F	F	F	F
d_A, Approach Delay [s/veh]	64.73			232.80			94.39			178.67		
Approach LOS	E			F			F			F		
d_I, Intersection Delay [s/veh]	148.18											
Intersection LOS	F											
Intersection V/C	1.348											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.51	49.51	49.51	49.51
l_p,int, Pedestrian LOS Score for Intersection	3.027	2.988	3.406	3.681
Crosswalk LOS	C	C	C	D
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	617	767	500	633
d_b, Bicycle Delay [s]	28.71	22.82	33.76	28.02
l_b,int, Bicycle LOS Score for Intersection	2.811	2.749	2.470	3.783
Bicycle LOS	C	B	B	D

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 15: SR-57 SB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	20.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.849

Intersection Setup

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	0	0	0	555	0	777	0	2000	1183	0	2807	349
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	555	0	777	0	2000	1183	0	2807	349
Peak Hour Factor	1.0000	1.0000	1.0000	0.9240	1.0000	0.9240	1.0000	0.9460	0.9460	1.0000	0.9730	0.9730
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	150	0	210	0	529	313	0	721	90
Total Analysis Volume [veh/h]	0	0	0	601	0	841	0	2114	1251	0	2885	359
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	7	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	6	0	0	0	6	0	0	6	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	74	0	0	0	26	0	0	26	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	15	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	C
C, Cycle Length [s]		100	100	100	100	100
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		32	32	32	60	60
g / C, Green / Cycle		0.32	0.32	0.32	0.60	0.60
(v / s)_i Volume / Saturation Flow Rate		0.27	0.27	0.25	0.37	0.51
s, saturation flow rate [veh/h]		1750	1750	1900	5700	5700
c, Capacity [veh/h]		564	564	613	3405	3405
d1, Uniform Delay [s]		31.60	31.60	30.68	12.87	16.39
k, delay calibration		0.11	0.11	0.11	0.50	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		3.75	3.75	2.26	0.86	2.82
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.85	0.85	0.78	0.62	0.85
d, Delay for Lane Group [s/veh]		35.35	35.35	32.94	13.73	19.21
Lane Group LOS		D	D	C	B	B
Critical Lane Group		Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]		11.13	11.13	10.62	9.57	17.05
50th-Percentile Queue Length [ft/ln]		278.31	278.31	265.57	239.26	426.35
95th-Percentile Queue Length [veh/ln]		16.60	16.60	15.97	14.64	23.83
95th-Percentile Queue Length [ft/ln]		415.10	415.10	399.20	366.10	595.66

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	35.35	0.00	33.97	0.00	13.73	0.00	0.00	19.21	0.00
Movement LOS				D		C		B			B	
d_A, Approach Delay [s/veh]	0.00			34.55			13.73			19.21		
Approach LOS	A			C			B			B		
d_I, Intersection Delay [s/veh]	20.84											
Intersection LOS	C											
Intersection V/C	0.849											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	39.57	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	2.487	0.000	0.000
Crosswalk LOS	F	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1401	440	440
d_b, Bicycle Delay [s]	49.97	4.48	30.39	30.39
l_b,int, Bicycle LOS Score for Intersection	4.132	3.939	2.722	3.146
Bicycle LOS	D	D	B	C

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 16: SR-57 NB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	34.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.854

Intersection Setup

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	1493	73	606	0	0	257	236	1976	591	0	2033	36
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1493	73	606	0	0	257	236	1976	591	0	2033	36
Peak Hour Factor	0.9320	0.9320	0.9320	1.0000	1.0000	0.8040	0.9340	0.9340	0.9340	1.0000	0.9510	0.9510
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	400	20	163	0	0	80	63	529	158	0	534	9
Total Analysis Volume [veh/h]	1602	78	650	0	0	320	253	2116	633	0	2138	38
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Overlap	Protecte	Permiss	Unsigna	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	0	5	5	2	0	0	6	0
Auxiliary Signal Groups						5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	6	0	0	0	6	6	6	0	0	6	0
Maximum Green [s]	0	30	0	0	0	30	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	1.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	56	0	0	0	29	29	59	0	0	30	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	22	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No				No		No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No				No	No	No			No	
Maximum Recall		No				No	No	No			No	
Pedestrian Recall		No				No	No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	R	L	C	C	C
C, Cycle Length [s]	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	45	45	45	19	19	62	39	39
g / C, Green / Cycle	0.39	0.39	0.39	0.16	0.16	0.54	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.33	0.34	0.31	0.08	0.14	0.37	0.29	0.29
s, saturation flow rate [veh/h]	3500	1750	1900	3800	1800	5700	5700	1900
c, Capacity [veh/h]	1366	683	742	619	293	3078	1951	650
d1, Uniform Delay [s]	31.78	32.25	31.00	43.99	46.87	19.34	34.83	34.83
k, delay calibration	0.11	0.28	0.24	0.11	0.11	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.46	8.31	4.28	0.67	7.71	1.27	4.44	12.14
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.84	0.87	0.80	0.52	0.86	0.69	0.84	0.84
d, Delay for Lane Group [s/veh]	33.24	40.56	35.28	44.66	54.58	20.62	39.27	46.96
Lane Group LOS	C	D	D	D	D	C	D	D
Critical Lane Group	No	Yes	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	14.44	16.38	15.11	4.22	7.65	13.61	14.62	16.01
50th-Percentile Queue Length [ft/ln]	360.92	409.38	377.65	105.62	191.23	340.33	365.44	400.19
95th-Percentile Queue Length [veh/ln]	20.67	23.01	21.48	7.60	12.19	19.66	20.89	22.57
95th-Percentile Queue Length [ft/ln]	516.71	575.29	537.00	189.90	304.63	491.61	522.20	564.23

Movement, Approach, & Intersection Results

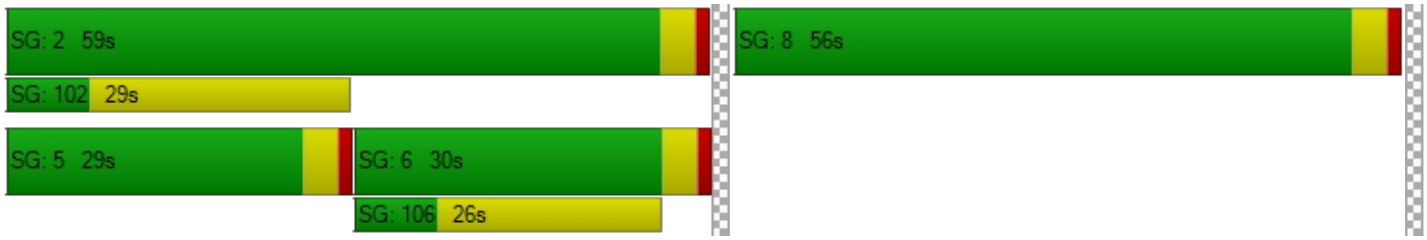
d_M, Delay for Movement [s/veh]	35.28	40.56	35.82	0.00	0.00	44.66	54.58	20.62	0.00	0.00	41.09	46.96
Movement LOS	D	D	D			D	D	C			D	D
d_A, Approach Delay [s/veh]	35.61			44.66			24.25			41.20		
Approach LOS	D			D			C			D		
d_I, Intersection Delay [s/veh]	33.96											
Intersection LOS	C											
Intersection V/C	0.854											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	47.01	47.01	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.766	2.176	0.000	0.000
Crosswalk LOS	C	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	905	435	957	452
d_b, Bicycle Delay [s]	17.25	35.21	15.64	34.43
l_b,int, Bicycle LOS Score for Intersection	5.404	1.560	2.863	2.457
Bicycle LOS	F	A	C	B

Sequence

Ring 1	-	2	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 17: Associated Road at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	35.6
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.850

Intersection Setup

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	248	186	115	313	238	193	241	1897	252	152	1673	217
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	248	186	115	313	238	193	241	1897	252	152	1673	217
Peak Hour Factor	0.9140	0.9140	0.9140	0.8970	0.8970	0.8970	0.9020	0.9020	0.9020	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	68	51	31	87	66	54	67	526	70	40	441	57
Total Analysis Volume [veh/h]	271	204	126	349	265	215	267	2103	279	160	1763	229
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	13	39	0	17	43	0	23	44	0	15	36	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	28	0	0	29	0	0	26	0	0	25	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	115	115	115	115	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	15	15	13	19	19	19	60	60	11	52	52
g / C, Green / Cycle	0.08	0.13	0.13	0.11	0.16	0.16	0.16	0.52	0.52	0.10	0.46	0.46
(v / s)_i Volume / Saturation Flow Rate	0.08	0.09	0.08	0.10	0.14	0.11	0.15	0.41	0.43	0.09	0.26	0.27
s, saturation flow rate [veh/h]	3500	1900	1900	3500	1900	1900	1800	3800	1900	1800	5700	1900
c, Capacity [veh/h]	276	245	245	397	311	311	295	1985	992	173	2592	864
d1, Uniform Delay [s]	52.91	48.08	47.56	50.22	46.79	45.40	47.25	22.40	22.87	51.58	23.14	23.31
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.13	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	21.05	3.82	2.72	6.33	6.61	2.76	12.25	3.34	7.37	17.88	0.93	2.89
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.98	0.71	0.64	0.88	0.85	0.69	0.91	0.79	0.82	0.92	0.57	0.59
d, Delay for Lane Group [s/veh]	73.96	51.90	50.28	56.55	53.39	48.16	59.50	25.74	30.24	69.46	24.06	26.20
Lane Group LOS	E	D	D	E	D	D	E	C	C	E	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.71	5.06	4.41	5.28	7.92	6.02	8.48	17.50	19.45	5.43	9.95	10.70
50th-Percentile Queue Length [ft/ln]	117.71	126.41	110.32	132.06	197.89	150.52	211.98	437.38	486.37	135.68	248.77	267.41
95th-Percentile Queue Length [veh/ln]	8.27	8.74	7.86	9.05	12.53	10.05	13.25	24.36	26.69	9.25	15.12	16.06
95th-Percentile Queue Length [ft/ln]	206.67	218.60	196.45	226.29	313.25	251.13	331.36	608.88	667.21	231.19	378.10	401.50

Movement, Approach, & Intersection Results

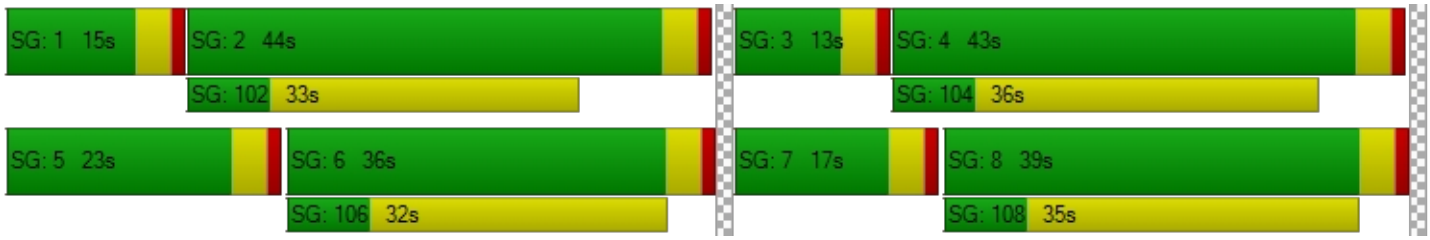
d_M, Delay for Movement [s/veh]	73.96	51.67	50.28	56.55	53.39	48.16	59.50	26.88	30.24	69.46	24.40	26.20
Movement LOS	E	D	D	E	D	D	E	C	C	E	C	C
d_A, Approach Delay [s/veh]	61.43			53.37			30.52			27.94		
Approach LOS	E			D			C			C		
d_I, Intersection Delay [s/veh]	35.65											
Intersection LOS	D											
Intersection V/C	0.850											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	47.05	47.05	47.05	47.05
l_p,int, Pedestrian LOS Score for Intersection	2.566	2.713	3.334	3.314
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	608	678	695	556
d_b, Bicycle Delay [s]	27.84	25.13	24.47	29.97
l_b,int, Bicycle LOS Score for Intersection	2.055	2.927	3.017	2.447
Bicycle LOS	B	C	C	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 18: Castlegate Lane/Placentia Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	23.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.811

Intersection Setup

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	179	18	244	27	11	12	25	2031	299	212	1951	48
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	179	18	244	27	11	12	25	2031	299	212	1951	48
Peak Hour Factor	0.9770	0.9770	0.9770	0.8650	0.8650	0.8650	0.9010	0.9010	0.9010	0.9030	0.9030	0.9030
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	46	5	62	8	3	3	7	564	83	59	540	13
Total Analysis Volume [veh/h]	183	18	250	31	13	14	28	2254	332	235	2161	53
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	26	0	0	10	0	10	32	0	27	49	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	15	0	0	0	0	0	21	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	C
C, Cycle Length [s]	95	95	95	95	95	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	15	15	5	5	3	45	45	14	56	56
g / C, Green / Cycle	0.16	0.16	0.16	0.05	0.05	0.03	0.47	0.47	0.15	0.59	0.59
(v / s)_i Volume / Saturation Flow Rate	0.06	0.06	0.13	0.02	0.01	0.02	0.40	0.17	0.13	0.38	0.40
s, saturation flow rate [veh/h]	1750	1750	1900	1800	1900	1800	5700	1900	1800	3800	1900
c, Capacity [veh/h]	277	277	300	91	96	62	2680	893	275	2238	1119
d1, Uniform Delay [s]	35.78	35.80	38.84	43.63	43.50	45.07	22.09	16.18	39.27	13.03	13.39
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.80	0.81	5.98	2.18	1.57	5.12	3.39	1.19	7.41	1.48	3.32
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.36	0.36	0.83	0.34	0.28	0.45	0.84	0.37	0.85	0.65	0.68
d, Delay for Lane Group [s/veh]	36.57	36.60	44.82	45.81	45.06	50.20	25.48	17.37	46.68	14.51	16.71
Lane Group LOS	D	D	D	D	D	D	C	B	D	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.12	2.13	6.07	0.76	0.65	0.73	14.61	4.75	5.84	9.82	11.07
50th-Percentile Queue Length [ft/ln]	52.89	53.37	151.76	18.89	16.25	18.29	365.28	118.80	145.94	245.60	276.83
95th-Percentile Queue Length [veh/ln]	3.81	3.84	10.11	1.36	1.17	1.32	20.88	8.33	9.80	14.96	16.53
95th-Percentile Queue Length [ft/ln]	95.20	96.07	252.78	34.00	29.25	32.93	522.00	208.17	245.00	374.11	413.26

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	36.59	36.60	44.82	45.81	45.06	45.06	50.20	25.48	17.37	46.68	15.23	16.71
Movement LOS	D	D	D	D	D	D	D	C	B	D	B	B
d_A, Approach Delay [s/veh]	41.15			45.46			24.71			18.28		
Approach LOS	D			D			C			B		
d_I, Intersection Delay [s/veh]	23.43											
Intersection LOS	C											
Intersection V/C	0.811											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	37.18	37.18	0.00	37.18
I_p,int, Pedestrian LOS Score for Intersection	2.385	1.994	0.000	3.290
Crosswalk LOS	B	A	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	463	126	589	947
d_b, Bicycle Delay [s]	28.09	41.73	23.66	13.19
I_b,int, Bicycle LOS Score for Intersection	2.304	1.655	2.997	2.907
Bicycle LOS	B	A	C	C

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

APPENDIX D-III

YEAR 2026 PLUS PROJECT TRAFFIC CONDITIONS

Brea Mall Expansion, Brea

Vistro File: N:\...\4099 HCM Network.vistro
Report File: N:\...\AM 2026+P.pdf

Scenario 7 AM 2026+P
4/12/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State College Boulevard at Lambert Road	Signalized	HCM 6th Edition	NB Thru	0.846	37.7	D
2	SR-57 SB Ramps at Lambert Road	Signalized	HCM 6th Edition	WB Left	0.889	29.1	C
3	SR-57 NB Ramps at Lambert Road	Signalized	HCM 6th Edition	NB Left	0.901	27.1	C
4	Randolph Avenue at Birch Street	Signalized	HCM 6th Edition	WB Left	0.404	14.4	B
5	State College Boulevard at Birch Street	Signalized	HCM 6th Edition	EB Left	0.694	40.7	D
6	S Associated Road at Birch Street	Signalized	HCM 6th Edition	EB Left	0.816	28.4	C
7	Randolph Avenue at Madison Way	Signalized	HCM 6th Edition	SB Left	0.155	16.3	B
8	Randolph Avenue at Brea Mall	Signalized	HCM 6th Edition	EB Left	0.197	17.3	B
9	Brea Mall South at State College Boulevard	Signalized	HCM 6th Edition	WB Left	0.301	20.3	C
10	Harbor Boulevard at Imperial Highway	Signalized	HCM 6th Edition	EB Right	0.935	46.2	D
11	Puente Street at Imperial Highway	Signalized	HCM 6th Edition	SB Left	0.595	20.6	C
12	Brea Boulevard at Imperial Highway	Signalized	HCM 6th Edition	EB Left	0.973	48.0	D
13	Randolph Avenue at Imperial Highway	Signalized	HCM 6th Edition	WB Left	0.612	16.6	B
14	State College Boulevard at Imperial Highway	Signalized	HCM 6th Edition	SB Left	0.875	36.0	D
15	SR-57 SB Ramps at Imperial Highway	Signalized	HCM 6th Edition	SB Left	0.683	16.2	B
16	SR-57 NB Ramps at Imperial Highway	Signalized	HCM 6th Edition	EB Left	0.699	22.6	C
17	Associated Road at Imperial Highway	Signalized	HCM 6th Edition	WB Left	0.813	32.7	C
18	Castlegate Lane/Placentia	Signalized	HCM 6th	EB Left	0.723	19.2	B

16	Avenue at Imperial Highway	Signalized	Edition	EB Left	0.723	19.2	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: State College Boulevard at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	37.7
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.846

Intersection Setup

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	173	225	213	926	620	8	15	1400	212	486	1794	576
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	173	225	213	926	620	8	15	1400	212	486	1794	576
Peak Hour Factor	0.9130	0.9130	0.9130	0.9700	0.9700	0.9700	0.9540	0.9540	0.9540	0.9540	0.9540	0.9540
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	47	62	58	239	160	2	4	367	56	127	470	151
Total Analysis Volume [veh/h]	189	246	233	955	639	8	16	1468	222	509	1881	604
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	12	14	0	42	44	0	10	39	0	25	54	54
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	0	0	0	33	0	0	28	0	0	22	22
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	8	12	12	12	36	40	40	3	37	37	19	53	93
g / C, Green / Cycle	0.07	0.10	0.10	0.10	0.30	0.33	0.33	0.02	0.30	0.30	0.16	0.45	0.78
(v / s)_i Volume / Saturation Flow Rate	0.05	0.09	0.08	0.08	0.27	0.17	0.17	0.00	0.22	0.22	0.15	0.33	0.32
s, saturation flow rate [veh/h]	3500	1900	1900	1900	3500	1900	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	236	191	191	191	1048	632	632	76	1733	578	569	2537	1478
d1, Uniform Delay [s]	55.20	53.40	52.99	52.68	40.51	32.22	32.20	57.73	37.37	37.47	49.26	27.59	4.34
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.24	14.04	8.91	6.65	3.49	0.64	0.64	1.37	2.74	8.16	5.21	2.00	0.84
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.80	0.90	0.83	0.78	0.91	0.51	0.51	0.21	0.73	0.74	0.89	0.74	0.41
d, Delay for Lane Group [s/veh]	61.44	67.44	61.90	59.33	43.99	32.87	32.85	59.10	40.11	45.63	54.46	29.59	5.18
Lane Group LOS	E	E	E	E	D	C	C	E	D	D	D	C	A
Critical Lane Group	No	Yes	No	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.02	5.87	5.16	4.72	13.95	7.67	7.65	0.25	11.44	12.45	7.87	15.07	4.33
50th-Percentile Queue Length [ft/ln]	75.59	146.8	129.0	117.9	348.81	191.81	191.22	6.34	285.99	311.19	196.73	376.67	108.28
95th-Percentile Queue Length [veh/ln]	5.44	9.85	8.89	8.28	20.08	12.22	12.18	0.46	16.99	18.23	12.47	21.43	7.74
95th-Percentile Queue Length [ft/ln]	136.0	246.1	222.2	206.9	501.95	305.38	304.61	11.41	424.66	455.85	311.75	535.82	193.60

Movement, Approach, & Intersection Results

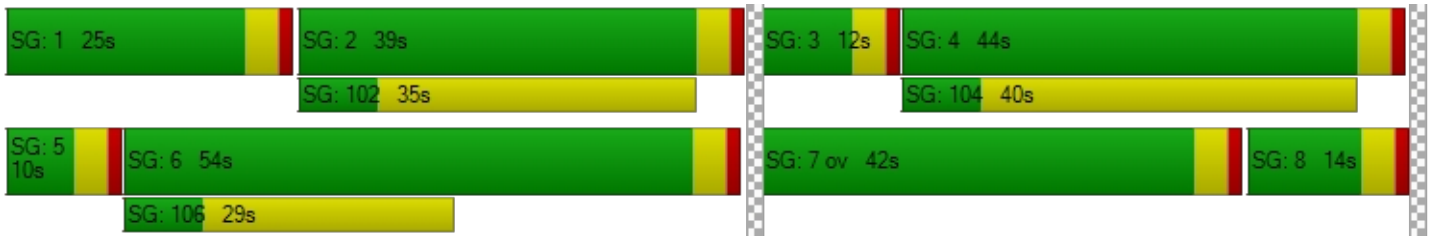
d_M, Delay for Movement [s/veh]	61.44	65.78	60.18	43.99	32.86	32.85	59.10	40.87	45.63	54.46	29.59	5.18
Movement LOS	E	E	E	D	C	C	E	D	D	D	C	A
d_A, Approach Delay [s/veh]	62.63			39.50			41.66			28.90		
Approach LOS	E			D			D			C		
d_I, Intersection Delay [s/veh]	37.69											
Intersection LOS	D											
Intersection V/C	0.846											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.52	49.52	49.52	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.892	2.868	3.273	0.000
Crosswalk LOS	C	C	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	167	666	583	833
d_b, Bicycle Delay [s]	50.43	26.68	30.12	20.43
l_b,int, Bicycle LOS Score for Intersection	2.111	2.881	2.263	3.206
Bicycle LOS	B	C	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: SR-57 SB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	29.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.889

Intersection Setup

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	0	0	0	1071	0	713	0	1909	635	246	2204	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	1071	0	713	0	1909	635	246	2204	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.8640	1.0000	0.8640	1.0000	0.9400	0.9400	0.9190	0.9190	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	310	0	206	0	508	169	67	600	0
Total Analysis Volume [veh/h]	0	0	0	1240	0	825	0	2031	676	268	2398	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	7	0	0	0	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	6	0	0	0	6	0	6	6	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	50	0	0	0	42	0	13	55	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	12	0	0	20	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall				No				No		No	No	
Maximum Recall				No				No		No	No	
Pedestrian Recall				No				No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	R	C	R	L	C
C, Cycle Length [s]		105	105	105	105	105	105
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		42	42	42	42	9	55
g / C, Green / Cycle		0.40	0.40	0.40	0.40	0.09	0.52
(v / s)_i Volume / Saturation Flow Rate		0.35	0.22	0.36	0.18	0.08	0.42
s, saturation flow rate [veh/h]		3500	3800	5700	3800	3500	5700
c, Capacity [veh/h]		1397	1516	2281	1521	303	2991
d1, Uniform Delay [s]		29.36	24.21	29.34	22.98	47.44	20.47
k, delay calibration		0.11	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		2.11	0.31	5.75	0.94	8.50	2.37
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.89	0.54	0.89	0.44	0.89	0.80
d, Delay for Lane Group [s/veh]		31.47	24.52	35.09	23.92	55.94	22.84
Lane Group LOS		C	C	D	C	E	C
Critical Lane Group		Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]		14.47	7.78	16.57	6.20	3.81	15.80
50th-Percentile Queue Length [ft/ln]		361.70	194.46	414.24	155.06	95.17	395.11
95th-Percentile Queue Length [veh/ln]		20.71	12.35	23.25	10.29	6.85	22.32
95th-Percentile Queue Length [ft/ln]		517.65	308.81	581.14	257.16	171.31	558.10

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	31.47	0.00	24.52	0.00	35.09	23.92	55.94	22.84	0.00
Movement LOS				C		C		D	C	E	C	
d_A, Approach Delay [s/veh]	0.00			28.70			32.30			26.17		
Approach LOS	A			C			C			C		
d_I, Intersection Delay [s/veh]	29.10											
Intersection LOS	C											
Intersection V/C	0.889											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	42.07	42.07	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.182	2.642	0.000	0.000
Crosswalk LOS	B	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	876	724	971
d_b, Bicycle Delay [s]	52.50	16.57	21.37	13.88
l_b,int, Bicycle LOS Score for Intersection	4.132	1.560	3.048	3.026
Bicycle LOS	D	A	C	C

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 3: SR-57 NB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	27.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.901

Intersection Setup

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			No			No			No		

Volumes

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	1080	0	512	0	0	0	0	2557	413	0	1382	498
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1080	0	512	0	0	0	0	2557	413	0	1382	498
Peak Hour Factor	0.8940	1.0000	0.8940	1.0000	1.0000	1.0000	0.9710	0.9710	0.9710	1.0000	0.8830	0.8830
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	302	0	143	0	0	0	0	658	106	0	391	0
Total Analysis Volume [veh/h]	1208	0	573	0	0	0	0	2633	425	0	1565	0
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Permiss	Split	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna
Signal Group	3	0	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	0	0	0	0	0	0	6	0	0	6	0
Maximum Green [s]	30	0	0	0	0	0	0	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	79	0	0	0	0	0	0	36	0	0	36	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	25	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R		C	C	R	C
C, Cycle Length [s]	115	115		115	115	115	115
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	46	46		61	61	61	61
g / C, Green / Cycle	0.40	0.40		0.53	0.53	0.53	0.53
(v / s)_i Volume / Saturation Flow Rate	0.35	0.30		0.46	0.46	0.22	0.27
s, saturation flow rate [veh/h]	3500	1900		3800	1900	1900	5700
c, Capacity [veh/h]	1390	755		2026	1013	1013	3039
d1, Uniform Delay [s]	31.86	29.87		23.25	23.25	16.12	17.25
k, delay calibration	0.11	0.11		0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.80	1.60		5.29	9.89	1.28	0.63
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.87	0.76		0.87	0.87	0.42	0.51
d, Delay for Lane Group [s/veh]	33.66	31.47		28.55	33.15	17.39	17.87
Lane Group LOS	C	C		C	C	B	B
Critical Lane Group	Yes	No		Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	15.42	13.74		21.11	22.41	6.95	8.83
50th-Percentile Queue Length [ft/ln]	385.52	343.59		527.83	560.18	173.64	220.69
95th-Percentile Queue Length [veh/ln]	21.86	19.82		28.65	30.17	11.27	13.70
95th-Percentile Queue Length [ft/ln]	546.53	495.59		716.22	754.26	281.70	342.50

Movement, Approach, & Intersection Results

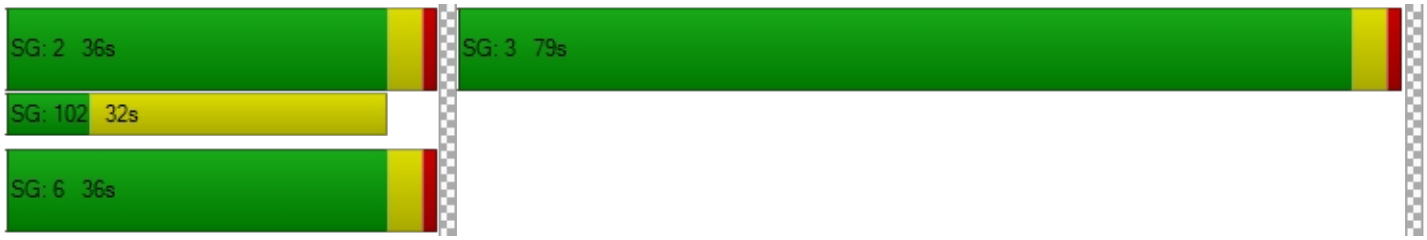
d_M, Delay for Movement [s/veh]	33.66	0.00	31.47	0.00	0.00	0.00	0.00	29.59	17.39	0.00	17.87	0.00
Movement LOS	C		C					C	B		B	
d_A, Approach Delay [s/veh]	32.96			0.00			28.32			17.87		
Approach LOS	C			A			C			B		
d_I, Intersection Delay [s/veh]	27.06											
Intersection LOS	C											
Intersection V/C	0.901											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	46.98	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.742	0.000	0.000	0.000
Crosswalk LOS	B	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1305	0	557	557
d_b, Bicycle Delay [s]	6.93	57.45	29.91	29.91
l_b,int, Bicycle LOS Score for Intersection	1.560	4.132	3.242	2.420
Bicycle LOS	A	D	C	B

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Randolph Avenue at Birch Street

Control Type:	Signalized	Delay (sec / veh):	14.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.404

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Base Volume Input [veh/h]	35	44	96	38	37	26	41	622	103	81	566	45
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	35	44	96	38	37	26	41	622	103	81	566	45
Peak Hour Factor	0.8140	0.8140	0.8140	0.7190	0.7190	0.7190	0.8220	0.8220	0.8220	0.8940	0.8940	0.8940
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	14	29	13	13	9	12	189	31	23	158	13
Total Analysis Volume [veh/h]	43	54	118	53	51	36	50	757	125	91	633	50
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	38	0	0	38	0	11	30	0	22	41	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	25	0	0	19	0	0	18	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	8	8	8	8	4	64	64	6	66	66
g / C, Green / Cycle	0.09	0.09	0.09	0.09	0.09	0.05	0.71	0.71	0.07	0.73	0.73
(v / s)_i Volume / Saturation Flow Rate	0.02	0.03	0.06	0.03	0.05	0.03	0.24	0.23	0.05	0.17	0.03
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1800	1900	1900	1800	3800	1900
c, Capacity [veh/h]	126	167	167	157	167	88	1353	1353	120	2774	1387
d1, Uniform Delay [s]	38.36	38.53	39.92	38.57	39.24	41.91	4.90	4.83	41.32	3.94	3.37
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.58	1.10	5.33	1.27	2.49	5.70	0.67	0.62	9.42	0.19	0.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.34	0.32	0.70	0.34	0.52	0.57	0.33	0.32	0.76	0.23	0.04
d, Delay for Lane Group [s/veh]	39.94	39.64	45.25	39.84	41.72	47.61	5.56	5.44	50.73	4.13	3.42
Lane Group LOS	D	D	D	D	D	D	A	A	D	A	A
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.93	1.16	2.76	1.14	1.93	1.21	2.80	2.62	2.28	1.54	0.22
50th-Percentile Queue Length [ft/ln]	23.34	28.97	68.88	28.58	48.31	30.37	69.97	65.52	56.88	38.38	5.41
95th-Percentile Queue Length [veh/ln]	1.68	2.09	4.96	2.06	3.48	2.19	5.04	4.72	4.10	2.76	0.39
95th-Percentile Queue Length [ft/ln]	42.00	52.15	123.99	51.45	86.96	54.67	125.95	117.93	102.39	69.08	9.73

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	39.94	39.64	45.25	39.84	41.72	41.72	47.61	5.52	5.44	50.73	4.13	3.42
Movement LOS	D	D	D	D	D	D	D	A	A	D	A	A
d_A, Approach Delay [s/veh]	42.78			41.01			7.76			9.57		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	14.35											
Intersection LOS	B											
Intersection V/C	0.404											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	34.68	34.68
l_p,int, Pedestrian LOS Score for Intersection	2.248	2.035	2.681	2.804
Crosswalk LOS	B	B	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	755	755	578	822
d_b, Bicycle Delay [s]	17.43	17.43	22.77	15.62
l_b,int, Bicycle LOS Score for Intersection	1.914	1.791	2.329	2.198
Bicycle LOS	A	A	B	B

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 5: State College Boulevard at Birch Street

Control Type:	Signalized	Delay (sec / veh):	40.7
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.694

Intersection Setup

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Base Volume Input [veh/h]	80	161	104	696	874	232	115	546	50	84	597	304
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	161	104	696	874	232	115	546	50	84	597	304
Peak Hour Factor	0.8430	0.8430	0.8430	0.8910	0.8910	0.8910	0.8600	0.8600	0.8600	0.7640	0.7640	0.7640
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	48	31	195	245	65	33	159	15	27	195	99
Total Analysis Volume [veh/h]	95	191	123	781	981	260	134	635	58	110	781	398
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	26	39	0	32	45	0	10	39	0	10	39	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	28	0	0	30	0	0	28	0	0	26	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	21	21	28	43	43	6	50	50	6	49	49
g / C, Green / Cycle	0.05	0.17	0.17	0.23	0.36	0.36	0.05	0.41	0.41	0.05	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.03	0.05	0.06	0.22	0.33	0.33	0.04	0.17	0.03	0.03	0.21	0.21
s, saturation flow rate [veh/h]	3500	3800	1900	3500	1900	1900	3500	3800	1900	3500	3800	1900
c, Capacity [veh/h]	170	654	327	816	678	678	178	1565	782	173	1560	780
d1, Uniform Delay [s]	55.84	43.32	43.99	45.43	36.88	36.88	56.25	24.94	21.42	56.00	26.25	26.39
k, delay calibration	0.11	0.11	0.11	0.11	0.24	0.24	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.84	0.24	0.71	7.56	10.63	10.63	6.36	0.78	0.18	3.82	1.15	2.38
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.56	0.29	0.38	0.96	0.92	0.92	0.75	0.41	0.07	0.63	0.50	0.51
d, Delay for Lane Group [s/veh]	58.68	43.56	44.70	52.99	47.51	47.51	62.60	25.72	21.61	59.81	27.40	28.76
Lane Group LOS	E	D	D	D	D	D	E	C	C	E	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.48	2.51	3.32	12.26	19.10	19.10	2.16	6.54	1.04	1.73	8.48	8.95
50th-Percentile Queue Length [ft/ln]	36.89	62.73	82.93	306.44	477.61	477.61	54.04	163.44	25.98	43.21	212.01	223.66
95th-Percentile Queue Length [veh/ln]	2.66	4.52	5.97	18.00	26.27	26.27	3.89	10.73	1.87	3.11	13.26	13.85
95th-Percentile Queue Length [ft/ln]	66.40	112.91	149.28	449.98	656.81	656.81	97.28	268.28	46.77	77.78	331.40	346.29

Movement, Approach, & Intersection Results

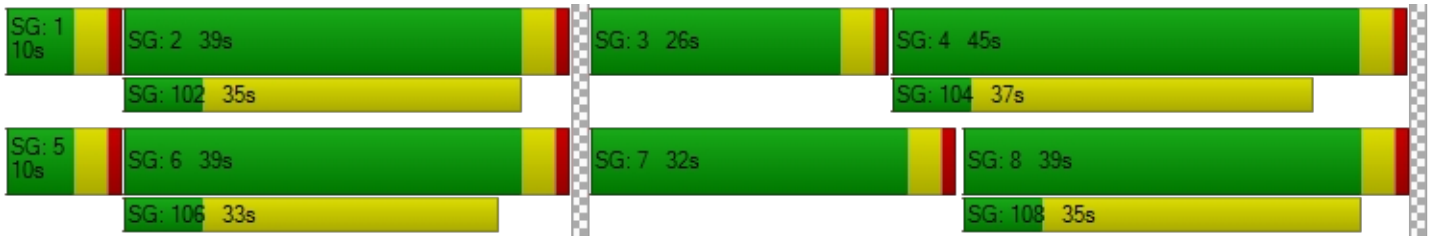
d_M, Delay for Movement [s/veh]	58.68	43.56	44.70	52.99	47.51	47.51	62.60	25.72	21.61	59.81	27.40	28.76
Movement LOS	E	D	D	D	D	D	E	C	C	E	C	C
d_A, Approach Delay [s/veh]	47.42			49.63			31.41			30.59		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	40.72											
Intersection LOS	D											
Intersection V/C	0.694											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.52	49.52	49.52	49.52
l_p,int, Pedestrian LOS Score for Intersection	2.825	2.913	2.881	3.002
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	583	683	583	583
d_b, Bicycle Delay [s]	30.12	26.02	30.12	30.12
l_b,int, Bicycle LOS Score for Intersection	1.897	3.228	2.242	2.623
Bicycle LOS	A	C	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



Intersection Level Of Service Report
Intersection 6: S Associated Road at Birch Street

Control Type:	Signalized	Delay (sec / veh):	28.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.816

Intersection Setup

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Base Volume Input [veh/h]	255	6	323	57	29	9	5	993	335	357	807	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	255	6	323	57	29	9	5	993	335	357	807	11
Peak Hour Factor	0.8160	0.8160	0.8160	0.7410	0.7410	0.7410	0.8560	0.8560	0.8560	0.9140	0.9140	0.9140
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	78	2	99	19	10	3	1	290	98	98	221	3
Total Analysis Volume [veh/h]	313	7	396	77	39	12	6	1160	391	391	883	12
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	8	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups			1,8									
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	6	0	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	30	0	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	24	61	61	0	37	0	10	38	0	21	49	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	26	26	0	26	0	0	27	0	0	26	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No		No		No	No		No	No	
Maximum Recall	No	No	No		No		No	No		No	No	
Pedestrian Recall	No	No	No		No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	24	45	7	7	1	67	67	17	83	83
g / C, Green / Cycle	0.11	0.20	0.38	0.06	0.06	0.01	0.56	0.56	0.14	0.69	0.69
(v / s)_i Volume / Saturation Flow Rate	0.09	0.00	0.21	0.04	0.03	0.00	0.42	0.40	0.11	0.24	0.24
s, saturation flow rate [veh/h]	3500	1900	1900	1800	1900	1800	1900	1900	3500	1900	1900
c, Capacity [veh/h]	382	385	718	137	114	18	1055	1055	497	1306	1306
d1, Uniform Delay [s]	52.31	38.29	29.33	55.39	54.48	59.03	20.46	19.67	49.75	7.69	7.68
k, delay calibration	0.11	0.11	0.33	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.35	0.02	2.01	3.56	2.71	10.37	5.05	4.13	2.81	0.72	0.71
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.82	0.02	0.55	0.56	0.45	0.33	0.76	0.71	0.79	0.34	0.34
d, Delay for Lane Group [s/veh]	56.66	38.31	31.34	58.95	57.19	69.40	25.51	23.80	52.56	8.41	8.39
Lane Group LOS	E	D	C	E	E	E	C	C	D	A	A
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.84	0.17	9.34	2.43	1.58	0.23	17.87	16.09	5.86	4.67	4.64
50th-Percentile Queue Length [ft/ln]	121.03	4.22	233.56	60.63	39.44	5.84	446.67	402.34	146.41	116.74	116.09
95th-Percentile Queue Length [veh/ln]	8.45	0.30	14.36	4.37	2.84	0.42	24.80	22.67	9.83	8.21	8.18
95th-Percentile Queue Length [ft/ln]	211.24	7.59	358.88	109.13	70.99	10.50	619.98	566.82	245.63	205.34	204.44

Movement, Approach, & Intersection Results

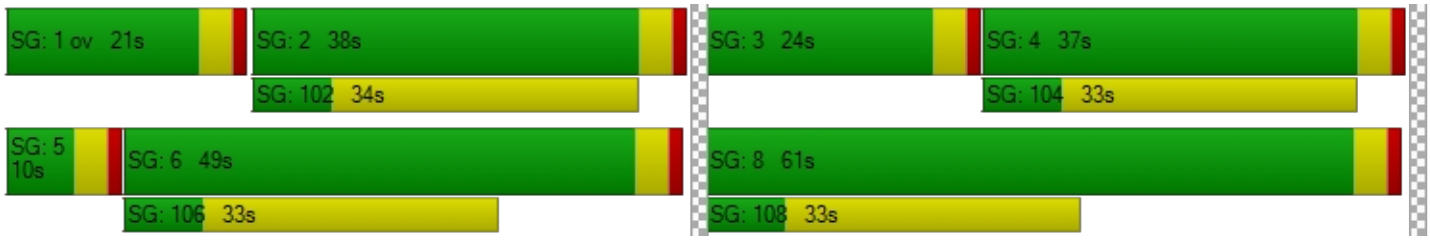
d_M, Delay for Movement [s/veh]	56.66	38.31	31.34	58.95	57.19	57.19	69.40	24.98	23.80	52.56	8.40	8.39
Movement LOS	E	D	C	E	E	E	E	C	C	D	A	A
d_A, Approach Delay [s/veh]	42.48			58.25			24.85			21.83		
Approach LOS	D			E			C			C		
d_I, Intersection Delay [s/veh]	28.38											
Intersection LOS	C											
Intersection V/C	0.816											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.52	49.52	49.52	49.52
l_p,int, Pedestrian LOS Score for Intersection	2.716	2.004	2.853	3.051
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	950	550	567	750
d_b, Bicycle Delay [s]	16.55	31.55	30.83	23.45
l_b,int, Bicycle LOS Score for Intersection	2.741	1.771	2.844	2.621
Bicycle LOS	B	A	C	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 7: Randolph Avenue at Madison Way

Control Type:	Signalized	Delay (sec / veh):	16.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.155

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Base Volume Input [veh/h]	26	154	8	6	141	17	35	2	59	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	154	8	6	141	17	35	2	59	0	0	0
Peak Hour Factor	0.9010	0.9010	0.9010	0.6500	0.6500	0.6500	0.5970	0.5970	0.5970	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	43	2	2	54	7	15	1	25	0	0	0
Total Analysis Volume [veh/h]	29	171	9	9	217	26	59	3	99	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	6	6	0	6	6	0	0	6	0	0	6	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	26	0	10	26	0	0	54	0	0	54	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	15	0	0	12	0	0	19	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	70	70	1	68	68	7	7	7	7
g / C, Green / Cycle	0.04	0.78	0.78	0.01	0.75	0.75	0.08	0.08	0.08	0.08
(v / s)_i Volume / Saturation Flow Rate	0.02	0.05	0.05	0.01	0.06	0.06	0.03	0.05	0.00	0.00
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1900	1800	1900	1800	1900
c, Capacity [veh/h]	64	1471	1471	26	1431	1431	185	148	93	148
d1, Uniform Delay [s]	42.56	2.41	2.41	43.93	2.93	2.93	39.59	40.46	0.00	0.00
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.91	0.08	0.08	7.37	0.12	0.12	0.98	5.63	0.00	0.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.45	0.06	0.06	0.34	0.09	0.08	0.32	0.69	0.00	0.00
d, Delay for Lane Group [s/veh]	47.47	2.49	2.49	51.30	3.05	3.04	40.56	46.09	0.00	0.00
Lane Group LOS	D	A	A	D	A	A	D	D	A	A
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.71	0.29	0.29	0.25	0.47	0.47	1.28	2.41	0.00	0.00
50th-Percentile Queue Length [ft/ln]	17.84	7.30	7.25	6.28	11.85	11.63	32.04	60.17	0.00	0.00
95th-Percentile Queue Length [veh/ln]	1.28	0.53	0.52	0.45	0.85	0.84	2.31	4.33	0.00	0.00
95th-Percentile Queue Length [ft/ln]	32.12	13.15	13.05	11.30	21.32	20.94	57.68	108.31	0.00	0.00

Movement, Approach, & Intersection Results

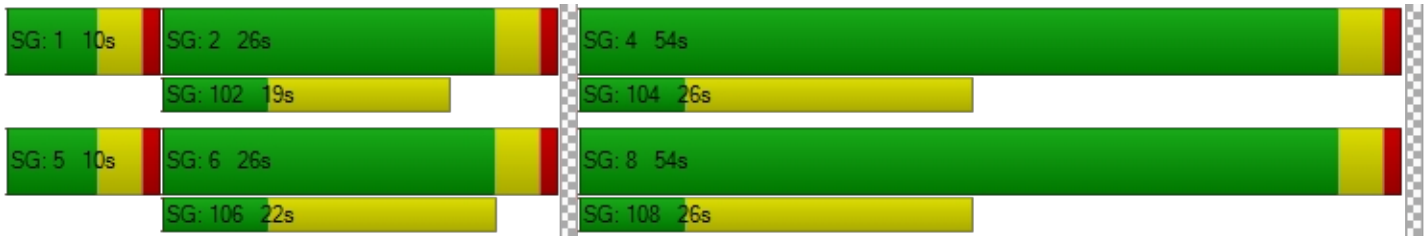
d_M, Delay for Movement [s/veh]	47.47	2.49	2.49	51.30	3.04	3.04	40.56	46.09	46.09	0.00	0.00	0.00
Movement LOS	D	A	A	D	A	A	D	D	D	A	A	A
d_A, Approach Delay [s/veh]	8.73			4.77			44.06			0.00		
Approach LOS	A			A			D			A		
d_I, Intersection Delay [s/veh]	16.27											
Intersection LOS	B											
Intersection V/C	0.155											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	34.68	34.68
l_p,int, Pedestrian LOS Score for Intersection	2.402	2.477	2.010	1.947
Crosswalk LOS	B	B	B	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	489	489	1111	1111
d_b, Bicycle Delay [s]	25.70	25.70	8.90	8.90
l_b,int, Bicycle LOS Score for Intersection	1.732	1.768	1.825	1.560
Bicycle LOS	A	A	A	A

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 8: Randolph Avenue at Brea Mall

Control Type:	Signalized	Delay (sec / veh):	17.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.197

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Base Volume Input [veh/h]	14	181	129	27	158	6	1	0	1	116	0	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	181	129	27	158	6	1	0	1	116	0	20
Peak Hour Factor	0.8280	0.8280	0.8280	0.9050	0.9050	0.9050	0.2500	0.2500	0.2500	0.6000	0.6000	0.6000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	55	39	7	44	2	1	0	1	48	0	8
Total Analysis Volume [veh/h]	17	219	156	30	175	7	4	0	4	193	0	33
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	6	6	0	6	6	0	0	6	0	0	6	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	29	0	10	29	0	0	30	0	0	31	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	17	0	0	18	0	0	19	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	R	L	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	78	71	71	78	72	72	1	1	9	9
g / C, Green / Cycle	0.78	0.71	0.71	0.78	0.72	0.72	0.01	0.01	0.09	0.09
(v / s)_i Volume / Saturation Flow Rate	0.01	0.10	0.09	0.02	0.05	0.05	0.00	0.00	0.06	0.06
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1900	1800	1900	1800	1900
c, Capacity [veh/h]	1479	1341	1341	1442	1363	1363	23	24	157	165
d1, Uniform Delay [s]	2.43	4.82	4.77	2.45	4.20	4.20	48.89	48.89	44.54	44.31
k, delay calibration	0.11	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.00	0.23	0.21	0.03	0.09	0.09	3.66	3.25	6.40	4.73
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.01	0.15	0.13	0.02	0.07	0.07	0.18	0.17	0.73	0.67
d, Delay for Lane Group [s/veh]	2.44	5.05	4.98	2.48	4.29	4.29	52.55	52.14	50.94	49.04
Lane Group LOS	A	A	A	A	A	A	D	D	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.06	1.24	1.11	0.11	0.51	0.51	0.12	0.12	3.03	2.88
50th-Percentile Queue Length [ft/ln]	1.40	30.96	27.87	2.71	12.75	12.68	3.04	3.00	75.68	72.08
95th-Percentile Queue Length [veh/ln]	0.10	2.23	2.01	0.19	0.92	0.91	0.22	0.22	5.45	5.19
95th-Percentile Queue Length [ft/ln]	2.53	55.73	50.16	4.87	22.96	22.83	5.46	5.40	136.22	129.74

Movement, Approach, & Intersection Results

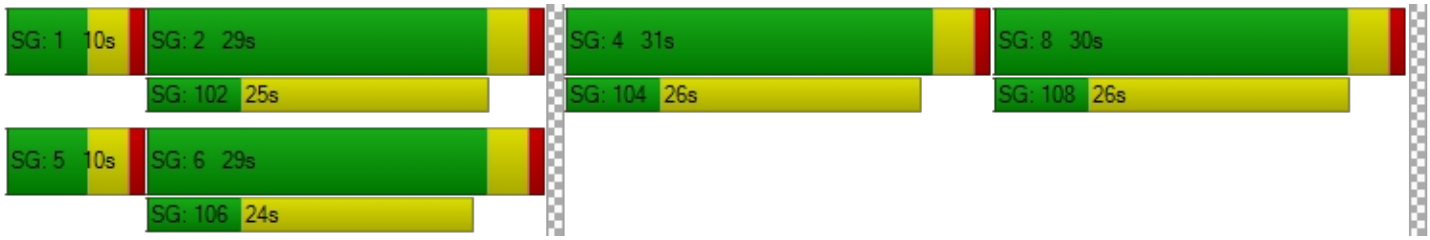
d_M, Delay for Movement [s/veh]	2.44	5.05	4.98	2.48	4.29	4.29	52.55	52.55	52.14	50.16	49.04	49.04
Movement LOS	A	A	A	A	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	4.91			4.04			52.34			50.00		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	17.30											
Intersection LOS	B											
Intersection V/C	0.197											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	39.62	39.62	39.62	39.62
l_p,int, Pedestrian LOS Score for Intersection	2.454	2.396	1.973	2.110
Crosswalk LOS	B	B	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	500	500	520	540
d_b, Bicycle Delay [s]	28.14	28.14	27.40	26.66
l_b,int, Bicycle LOS Score for Intersection	1.883	1.735	1.573	1.933
Bicycle LOS	A	A	A	A

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 9: Brea Mall South at State College Boulevard

Control Type:	Signalized	Delay (sec / veh):	20.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.301

Intersection Setup

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Base Volume Input [veh/h]	33	9	16	17	6	67	149	269	16	28	381	26
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	33	9	16	17	6	67	149	269	16	28	381	26
Peak Hour Factor	0.5830	0.5830	0.5830	0.5500	0.5500	0.5500	0.8240	0.8240	0.8240	0.9420	0.9420	0.9420
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	4	7	8	3	30	45	82	5	7	101	7
Total Analysis Volume [veh/h]	57	15	27	31	11	122	181	326	19	30	404	28
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	4	5	2	0	1	6	0
Auxiliary Signal Groups						4,5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	6	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	30	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	37	0	0	10	10	21	36	0	17	32	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	26	0	0	0	0	0	20	0	0	21	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No	No	No	No		No	No	
Maximum Recall		No			No	No	No	No		No	No	
Pedestrian Recall		No			No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	C	C	R	L	C	C	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	6	6	6	6	27	8	69	69	3	65	65
g / C, Green / Cycle	0.06	0.06	0.06	0.06	0.06	0.27	0.08	0.69	0.69	0.03	0.65	0.65
(v / s)_i Volume / Saturation Flow Rate	0.01	0.03	0.01	0.02	0.01	0.06	0.05	0.09	0.09	0.02	0.11	0.11
s, saturation flow rate [veh/h]	1800	1800	1900	1800	1900	1900	3500	1900	1900	1800	1900	1900
c, Capacity [veh/h]	144	164	109	110	116	522	269	1306	1306	63	1226	1226
d1, Uniform Delay [s]	45.05	45.80	45.15	44.94	44.42	28.14	44.99	5.40	5.39	47.40	7.11	7.10
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.47	1.06	1.18	1.40	0.35	0.23	2.91	0.21	0.21	5.43	0.32	0.31
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.15	0.31	0.25	0.28	0.10	0.23	0.67	0.13	0.13	0.47	0.18	0.17
d, Delay for Lane Group [s/veh]	45.51	46.86	46.34	46.33	44.77	28.37	47.91	5.61	5.59	52.83	7.43	7.41
Lane Group LOS	D	D	D	D	D	C	D	A	A	D	A	A
Critical Lane Group	No	Yes	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.52	1.27	0.67	0.78	0.27	2.29	2.28	1.18	1.16	0.83	1.81	1.78
50th-Percentile Queue Length [ft/ln]	13.05	31.64	16.87	19.38	6.71	57.25	57.09	29.54	29.05	20.65	45.37	44.53
95th-Percentile Queue Length [veh/ln]	0.94	2.28	1.21	1.40	0.48	4.12	4.11	2.13	2.09	1.49	3.27	3.21
95th-Percentile Queue Length [ft/ln]	23.48	56.95	30.37	34.89	12.08	103.05	102.77	53.17	52.28	37.18	81.67	80.15

Movement, Approach, & Intersection Results

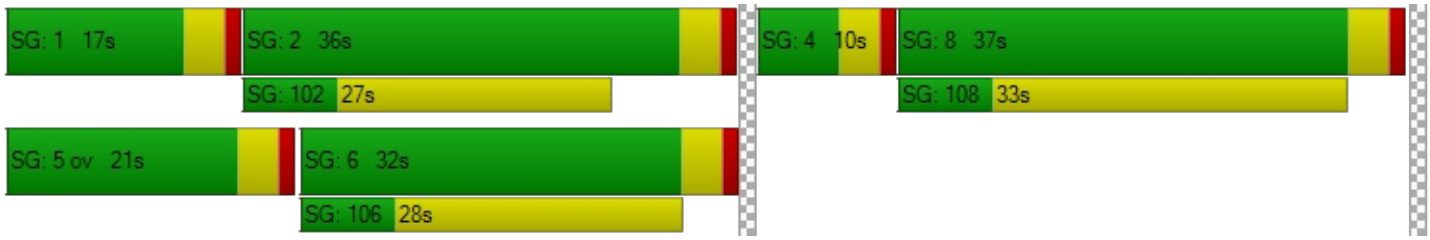
d_M, Delay for Movement [s/veh]	46.30	46.86	46.34	46.33	44.77	28.37	47.91	5.60	5.59	52.83	7.42	7.41
Movement LOS	D	D	D	D	D	C	D	A	A	D	A	A
d_A, Approach Delay [s/veh]	46.43			32.87			20.16			10.37		
Approach LOS	D			C			C			B		
d_I, Intersection Delay [s/veh]	20.29											
Intersection LOS	C											
Intersection V/C	0.301											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	39.64	39.64	0.00	39.64
l_p,int, Pedestrian LOS Score for Intersection	2.336	2.380	0.000	2.470
Crosswalk LOS	B	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	660	120	640	560
d_b, Bicycle Delay [s]	22.48	44.22	23.15	25.95
l_b,int, Bicycle LOS Score for Intersection	1.723	1.695	1.994	1.941
Bicycle LOS	A	A	A	A

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 10: Harbor Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	46.2
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.935

Intersection Setup

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	314	712	279	175	1318	318	289	1408	375	313	1259	266
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	314	712	279	175	1318	318	289	1408	375	313	1259	266
Peak Hour Factor	0.8230	0.8230	0.8230	0.9630	0.9630	0.9630	0.8630	0.8630	0.8630	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	95	216	85	45	342	83	84	408	109	80	321	68
Total Analysis Volume [veh/h]	382	865	339	182	1369	330	335	1632	435	319	1285	271
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	17	44	0	12	39	0	17	43	0	16	42	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	31	0	0	28	0	0	31	0	0	29	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	115	115	115	115	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	37	37	8	32	32	13	42	42	12	41	41
g / C, Green / Cycle	0.11	0.32	0.32	0.07	0.28	0.28	0.11	0.36	0.36	0.10	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.11	0.15	0.18	0.05	0.24	0.17	0.10	0.36	0.36	0.09	0.23	0.14
s, saturation flow rate [veh/h]	3500	5700	1900	3500	5700	1900	3500	3800	1900	3500	5700	1900
c, Capacity [veh/h]	397	1837	612	242	1584	528	393	1386	693	367	2037	679
d1, Uniform Delay [s]	50.76	31.15	32.17	52.61	39.50	36.32	50.16	36.53	36.24	50.73	30.67	27.71
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.14	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	13.63	0.19	0.78	4.71	1.53	1.59	5.33	23.93	30.67	6.34	1.50	1.75
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.96	0.47	0.55	0.75	0.86	0.63	0.85	1.00	0.98	0.87	0.63	0.40
d, Delay for Lane Group [s/veh]	64.39	31.34	32.95	57.32	41.03	37.91	55.48	60.46	66.91	57.07	32.17	29.46
Lane Group LOS	E	C	C	E	D	D	E	E	E	E	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	6.21	6.40	7.87	2.74	12.34	8.29	5.01	23.58	24.46	4.84	10.05	5.91
50th-Percentile Queue Length [ft/ln]	155.23	160.12	196.73	68.45	308.49	207.24	125.33	589.53	611.45	120.97	251.13	147.76
95th-Percentile Queue Length [veh/ln]	10.30	10.56	12.47	4.93	18.10	13.01	8.68	31.55	32.57	8.45	15.24	9.90
95th-Percentile Queue Length [ft/ln]	257.39	263.88	311.74	123.21	452.52	325.29	217.12	788.63	814.21	211.16	381.08	247.43

Movement, Approach, & Intersection Results

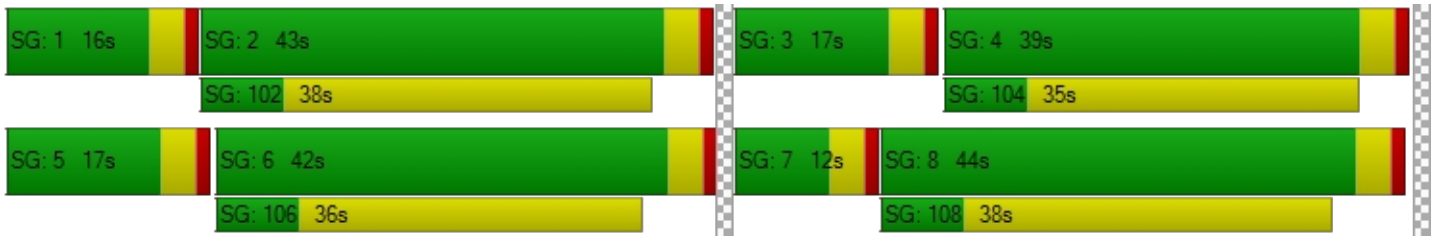
d_M, Delay for Movement [s/veh]	64.39	31.34	32.95	57.32	41.03	37.91	55.48	61.44	66.91	57.07	32.17	29.46
Movement LOS	E	C	C	E	D	D	E	E	E	E	C	C
d_A, Approach Delay [s/veh]	39.64			42.06			61.60			36.01		
Approach LOS	D			D			E			D		
d_I, Intersection Delay [s/veh]	46.16											
Intersection LOS	D											
Intersection V/C	0.935											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	47.05	47.05	47.05	47.05
l_p,int, Pedestrian LOS Score for Intersection	3.263	3.224	3.273	3.297
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	695	608	678	661
d_b, Bicycle Delay [s]	24.47	27.84	25.13	25.80
l_b,int, Bicycle LOS Score for Intersection	2.432	2.594	2.881	2.591
Bicycle LOS	B	B	C	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 11: Puente Street at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	20.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.595

Intersection Setup

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	61	118	161	141	87	148	234	1465	81	53	1497	175
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	61	118	161	141	87	148	234	1465	81	53	1497	175
Peak Hour Factor	0.8950	0.8950	0.8950	0.8510	0.8510	0.8510	0.8710	0.8710	0.8710	0.9670	0.9670	0.9670
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	33	45	41	26	43	67	420	23	14	387	45
Total Analysis Volume [veh/h]	68	132	180	166	102	174	269	1682	93	55	1548	181
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	39	0	0	39	0	17	32	0	19	34	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	23	0	0	17	0	0	23	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	11	11	11	11	11	13	62	62	5	54	54
g / C, Green / Cycle	0.12	0.12	0.12	0.12	0.12	0.12	0.14	0.69	0.69	0.05	0.60	0.60
(v / s)_i Volume / Saturation Flow Rate	0.04	0.07	0.09	0.09	0.03	0.09	0.15	0.31	0.32	0.03	0.27	0.10
s, saturation flow rate [veh/h]	1800	1900	1900	1800	3800	1900	1800	3800	1900	1800	5700	1900
c, Capacity [veh/h]	224	235	235	151	471	235	261	2629	1315	92	3407	1136
d1, Uniform Delay [s]	35.91	37.14	38.17	37.72	35.51	38.04	38.49	6.18	6.26	41.83	10.00	8.05
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.75	2.09	5.12	64.76	0.23	4.51	33.84	0.55	1.15	6.13	0.44	0.30
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.30	0.56	0.76	1.10	0.22	0.74	1.03	0.45	0.46	0.60	0.45	0.16
d, Delay for Lane Group [s/veh]	36.67	39.22	43.29	102.48	35.74	42.55	72.33	6.73	7.41	47.96	10.44	8.35
Lane Group LOS	D	D	D	F	D	D	F	A	A	D	B	A
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.39	2.84	4.12	5.85	1.01	3.94	8.11	4.27	4.65	1.34	5.21	1.53
50th-Percentile Queue Length [ft/ln]	34.79	70.90	102.97	146.22	25.31	98.50	202.71	106.83	116.33	33.50	130.28	38.18
95th-Percentile Queue Length [veh/ln]	2.51	5.10	7.41	10.17	1.82	7.09	12.95	7.66	8.19	2.41	8.96	2.75
95th-Percentile Queue Length [ft/ln]	62.63	127.62	185.34	254.37	45.55	177.29	323.65	191.58	204.78	60.30	223.88	68.73

Movement, Approach, & Intersection Results

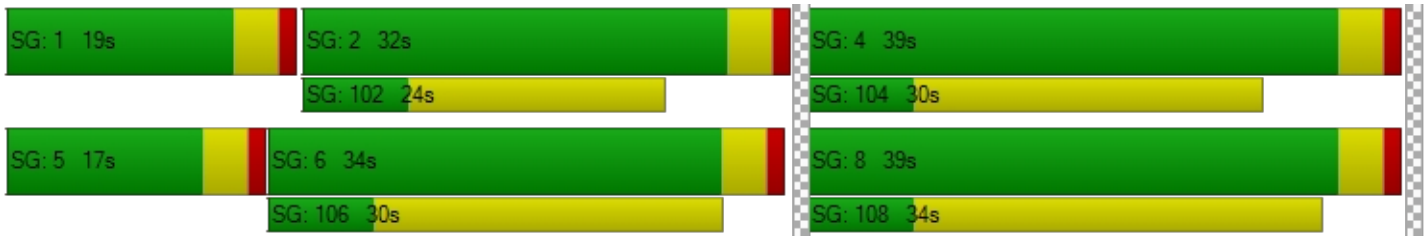
d_M, Delay for Movement [s/veh]	36.67	39.22	43.29	102.48	35.74	42.55	72.33	6.94	7.41	47.96	10.44	8.35
Movement LOS	D	D	D	F	D	D	F	A	A	D	B	A
d_A, Approach Delay [s/veh]	40.69			63.49			15.57			11.39		
Approach LOS	D			E			B			B		
d_I, Intersection Delay [s/veh]	20.57											
Intersection LOS	C											
Intersection V/C	0.595											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	34.68	34.68
l_p,int, Pedestrian LOS Score for Intersection	2.422	2.499	3.224	3.426
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	778	778	622	666
d_b, Bicycle Delay [s]	16.82	16.82	21.37	20.01
l_b,int, Bicycle LOS Score for Intersection	2.187	1.924	2.684	2.541
Bicycle LOS	B	A	B	B

Sequence

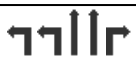
Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: Brea Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	48.0
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.973

Intersection Setup

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	450	501	172	172	1032	209	166	1630	367	180	1708	116
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	450	501	172	172	1032	209	166	1630	367	180	1708	116
Peak Hour Factor	0.7960	0.7960	0.7960	0.9500	0.9500	0.9500	0.9210	0.9210	0.9210	0.8690	0.8690	0.8690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	141	157	54	45	272	55	45	442	100	52	491	33
Total Analysis Volume [veh/h]	565	629	216	181	1086	220	180	1770	398	207	1965	133
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	24	41	0	22	39	0	11	45	0	12	46	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	30	0	0	28	0	0	30	0	0	30	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	20	47	47	8	35	35	7	41	41	8	42	42
g / C, Green / Cycle	0.17	0.39	0.39	0.07	0.29	0.29	0.06	0.34	0.34	0.07	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.16	0.11	0.11	0.05	0.29	0.12	0.05	0.31	0.21	0.06	0.34	0.07
s, saturation flow rate [veh/h]	3500	5700	1900	3500	3800	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	584	2208	736	245	1104	552	205	1952	651	234	2000	667
d1, Uniform Delay [s]	49.69	25.32	25.41	54.73	42.28	34.15	56.07	37.63	32.82	55.54	38.60	27.19
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.33	0.07	0.22	4.32	9.28	0.47	11.40	7.59	4.25	10.61	16.44	0.67
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.97	0.28	0.29	0.74	0.98	0.40	0.88	0.91	0.61	0.88	0.98	0.20
d, Delay for Lane Group [s/veh]	61.02	25.39	25.63	59.05	51.55	34.61	67.48	45.22	37.07	66.15	55.04	27.87
Lane Group LOS	E	C	C	E	D	C	E	D	D	E	E	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	9.30	4.14	4.32	2.83	17.20	5.23	3.03	17.67	10.36	3.45	21.81	2.81
50th-Percentile Queue Length [ft/ln]	232.62	103.60	107.88	70.77	429.91	130.84	75.72	441.77	258.95	86.24	545.14	70.22
95th-Percentile Queue Length [veh/ln]	14.31	7.46	7.72	5.10	24.00	8.99	5.45	24.56	15.64	6.21	29.46	5.06
95th-Percentile Queue Length [ft/ln]	357.68	186.47	193.04	127.38	599.93	224.63	136.29	614.12	390.91	155.24	736.59	126.39

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	61.02	25.39	25.63	59.05	51.55	34.61	67.48	45.22	37.07	66.15	55.04	27.87
Movement LOS	E	C	C	E	D	C	E	D	D	E	E	C
d_A, Approach Delay [s/veh]	39.70			49.96			45.54			54.47		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	48.05											
Intersection LOS	D											
Intersection V/C	0.973											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.51	49.51	49.51	49.51
l_p,int, Pedestrian LOS Score for Intersection	3.117	3.035	3.415	3.347
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	617	583	683	700
d_b, Bicycle Delay [s]	28.71	30.11	26.01	25.35
l_b,int, Bicycle LOS Score for Intersection	2.335	2.786	2.851	2.827
Bicycle LOS	B	C	C	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 13: Randolph Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	16.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.612

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	37	19	68	185	21	69	104	1683	26	41	1790	172
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	37	19	68	185	21	69	104	1683	26	41	1790	172
Peak Hour Factor	0.7700	0.7700	0.7700	0.8070	0.8070	0.8070	0.8950	0.8950	0.8950	0.8510	0.8510	0.8510
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	6	22	57	7	21	29	470	7	12	526	51
Total Analysis Volume [veh/h]	48	25	88	229	26	86	116	1880	29	48	2103	202
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	10	0	0	40	0	10	40	0	10	40	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	29	0	0	28	0	0	29	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	7	7	9	9	6	63	63	4	62	62
g / C, Green / Cycle	0.07	0.07	0.07	0.09	0.09	0.06	0.63	0.63	0.04	0.62	0.62
(v / s)_i Volume / Saturation Flow Rate	0.03	0.01	0.05	0.07	0.06	0.03	0.33	0.34	0.03	0.37	0.11
s, saturation flow rate [veh/h]	1800	1800	1900	3500	1900	3500	3800	1900	1800	5700	1900
c, Capacity [veh/h]	124	124	131	328	178	205	2402	1201	82	3528	1176
d1, Uniform Delay [s]	44.58	44.00	45.50	44.01	43.70	45.90	10.11	10.34	46.88	11.52	8.14
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.95	0.79	5.81	2.69	3.63	2.45	0.82	1.78	6.58	0.75	0.32
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.39	0.20	0.67	0.70	0.63	0.57	0.52	0.54	0.59	0.60	0.17
d, Delay for Lane Group [s/veh]	46.54	44.79	51.31	46.70	47.33	48.35	10.93	12.11	53.47	12.27	8.45
Lane Group LOS	D	D	D	D	D	D	B	B	D	B	A
Critical Lane Group	No	No	Yes	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.20	0.61	2.33	2.86	2.84	1.47	7.11	7.89	1.32	8.77	1.84
50th-Percentile Queue Length [ft/ln]	30.05	15.26	58.36	71.43	70.90	36.68	177.79	197.16	32.91	219.24	45.95
95th-Percentile Queue Length [veh/ln]	2.16	1.10	4.20	5.14	5.10	2.64	11.48	12.49	2.37	13.63	3.31
95th-Percentile Queue Length [ft/ln]	54.09	27.47	105.05	128.58	127.61	66.03	287.12	312.30	59.24	340.66	82.72

Movement, Approach, & Intersection Results

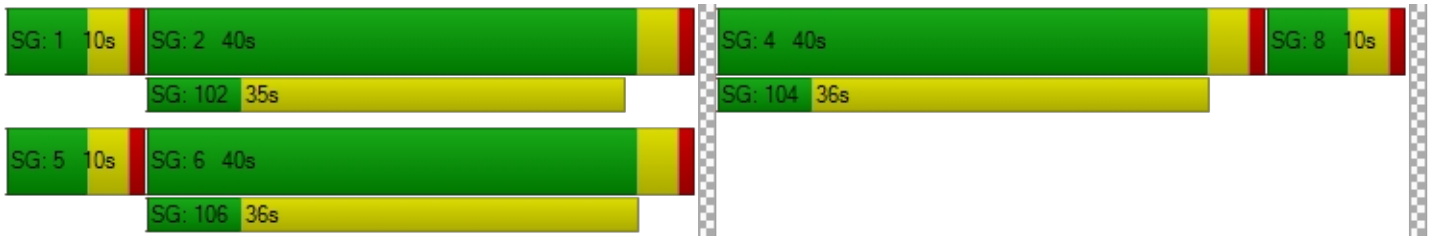
d_M, Delay for Movement [s/veh]	46.54	44.79	51.31	46.70	47.33	47.33	48.35	11.32	12.11	53.47	12.27	8.45
Movement LOS	D	D	D	D	D	D	D	B	B	D	B	A
d_A, Approach Delay [s/veh]	48.87			46.91			13.46			12.78		
Approach LOS	D			D			B			B		
d_I, Intersection Delay [s/veh]	16.64											
Intersection LOS	B											
Intersection V/C	0.612											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	39.64	39.64	39.64	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.200	2.438	3.250	0.000
Crosswalk LOS	B	B	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	120	719	719	719
d_b, Bicycle Delay [s]	44.22	20.51	20.51	20.51
l_b,int, Bicycle LOS Score for Intersection	1.692	2.122	2.673	2.854
Bicycle LOS	A	B	B	C

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 14: State College Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	36.0
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.875

Intersection Setup

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	119	178	429	126	407	28	35	1725	204	462	1859	196
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	119	178	429	126	407	28	35	1725	204	462	1859	196
Peak Hour Factor	0.9050	0.9050	0.9050	0.9420	0.9420	0.9420	0.9090	0.9090	0.9090	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	49	119	33	108	7	10	474	56	128	516	54
Total Analysis Volume [veh/h]	131	197	474	134	432	30	39	1898	224	513	2066	218
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	15	42	0	12	39	0	10	34	0	22	46	46
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	30	0	0	28	0	0	23	0	0	23	23
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	6	30	30	8	32	32	4	38	38	18	52	64
g / C, Green / Cycle	0.06	0.27	0.27	0.07	0.29	0.29	0.04	0.35	0.35	0.16	0.47	0.58
(v / s)_i Volume / Saturation Flow Rate	0.04	0.05	0.25	0.07	0.12	0.12	0.01	0.28	0.28	0.15	0.36	0.11
s, saturation flow rate [veh/h]	3500	3800	1900	2000	1900	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	195	1037	518	147	552	552	136	1970	657	570	2676	1101
d1, Uniform Delay [s]	50.98	30.71	38.79	50.66	31.60	31.52	51.42	32.63	32.97	45.20	24.30	11.01
k, delay calibration	0.11	0.11	0.26	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.94	0.09	13.99	18.69	0.52	0.50	1.14	3.57	11.27	5.46	2.23	0.40
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.67	0.19	0.91	0.91	0.42	0.41	0.29	0.80	0.82	0.90	0.77	0.20
d, Delay for Lane Group [s/veh]	54.92	30.79	52.78	69.35	32.12	32.02	52.55	36.20	44.24	50.65	26.53	11.41
Lane Group LOS	D	C	D	E	C	C	D	D	D	D	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.88	2.02	14.23	2.21	5.08	4.97	0.54	13.13	15.01	7.26	14.93	2.58
50th-Percentile Queue Length [ft/ln]	46.89	50.55	355.76	55.22	126.96	124.16	13.61	328.17	375.13	181.46	373.36	64.46
95th-Percentile Queue Length [veh/ln]	3.38	3.64	20.42	3.98	8.77	8.62	0.98	19.07	21.36	11.68	21.27	4.64
95th-Percentile Queue Length [ft/ln]	84.40	90.99	510.42	99.40	219.36	215.53	24.49	476.72	533.94	291.92	531.80	116.02

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	54.92	30.79	52.78	69.35	32.07	32.02	52.55	37.54	44.24	50.65	26.53	11.41
Movement LOS	D	C	D	E	C	C	D	D	D	D	C	B
d_A, Approach Delay [s/veh]	47.73			40.45			38.51			29.78		
Approach LOS	D			D			D			C		
d_I, Intersection Delay [s/veh]	36.01											
Intersection LOS	D											
Intersection V/C	0.875											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	44.58	44.58	44.58	44.58
l_p,int, Pedestrian LOS Score for Intersection	2.878	2.633	3.334	3.493
Crosswalk LOS	C	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	691	636	545	763
d_b, Bicycle Delay [s]	23.59	25.59	29.11	21.04
l_b,int, Bicycle LOS Score for Intersection	2.221	2.051	2.451	3.098
Bicycle LOS	B	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 15: SR-57 SB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	16.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.683

Intersection Setup

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	0	0	0	611	0	521	0	1581	749	0	2020	202
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	611	0	521	0	1581	749	0	2020	202
Peak Hour Factor	1.0000	1.0000	1.0000	0.8810	1.0000	0.8810	1.0000	0.9270	0.9270	1.0000	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	173	0	148	0	426	202	0	537	54
Total Analysis Volume [veh/h]	0	0	0	694	0	591	0	1706	808	0	2149	215
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	7	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	6	0	0	0	6	0	0	6	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	64	0	0	0	26	0	0	26	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	15	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	C
C, Cycle Length [s]		90	90	90	90	90
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		26	26	26	56	56
g / C, Green / Cycle		0.29	0.29	0.29	0.62	0.62
(v / s)_i Volume / Saturation Flow Rate		0.24	0.24	0.23	0.30	0.38
s, saturation flow rate [veh/h]		1750	1750	1900	5700	5700
c, Capacity [veh/h]		513	513	557	3522	3522
d1, Uniform Delay [s]		29.73	29.73	28.99	9.35	10.52
k, delay calibration		0.11	0.11	0.11	0.50	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		3.67	3.67	2.28	0.48	0.80
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.84	0.84	0.77	0.48	0.61
d, Delay for Lane Group [s/veh]		33.40	33.40	31.27	9.83	11.32
Lane Group LOS		C	C	C	A	B
Critical Lane Group		Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]		8.89	8.89	8.52	5.57	7.93
50th-Percentile Queue Length [ft/ln]		222.34	222.34	212.88	139.24	198.23
95th-Percentile Queue Length [veh/ln]		13.78	13.78	13.30	9.44	12.55
95th-Percentile Queue Length [ft/ln]		344.61	344.61	332.52	236.00	313.68

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	33.40	0.00	31.86	0.00	9.83	0.00	0.00	11.32	0.00
Movement LOS				C		C		A			B	
d_A, Approach Delay [s/veh]	0.00			32.69			9.83			11.32		
Approach LOS	A			C			A			B		
d_I, Intersection Delay [s/veh]	16.17											
Intersection LOS	B											
Intersection V/C	0.683											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	34.63	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	2.444	0.000	0.000
Crosswalk LOS	F	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1335	489	489
d_b, Bicycle Delay [s]	44.96	4.98	25.65	25.65
l_b,int, Bicycle LOS Score for Intersection	4.132	3.680	2.498	2.742
Bicycle LOS	D	D	B	B

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 16: SR-57 NB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	22.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.699

Intersection Setup

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	1044	31	850	0	0	87	100	1463	570	0	1583	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1044	31	850	0	0	87	100	1463	570	0	1583	14
Peak Hour Factor	0.9080	0.9080	0.9080	1.0000	1.0000	0.6820	0.8790	0.8790	0.8790	1.0000	0.8940	0.8940
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	287	9	234	0	0	32	28	416	162	0	443	4
Total Analysis Volume [veh/h]	1150	34	936	0	0	128	114	1664	648	0	1771	16
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Overlap	Protecte	Permiss	Unsigna	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	0	5	5	2	0	0	6	0
Auxiliary Signal Groups						5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	6	0	0	0	6	6	6	0	0	6	0
Maximum Green [s]	0	30	0	0	0	30	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	1.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	49	0	0	0	11	11	41	0	0	30	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	22	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No				No		No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No				No	No	No			No	
Maximum Recall		No				No	No	No			No	
Pedestrian Recall		No				No	No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	R	L	C	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	34	34	34	7	7	48	37	37
g / C, Green / Cycle	0.38	0.38	0.38	0.08	0.08	0.53	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.30	0.31	0.28	0.03	0.06	0.29	0.24	0.24
s, saturation flow rate [veh/h]	3500	1750	1900	3800	1800	5700	5700	1900
c, Capacity [veh/h]	1329	664	721	299	142	3030	2328	776
d1, Uniform Delay [s]	24.70	25.02	24.17	39.55	40.80	13.95	20.60	20.60
k, delay calibration	0.11	0.18	0.14	0.11	0.11	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.06	3.91	2.03	0.97	10.13	0.72	1.04	3.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.81	0.75	0.43	0.80	0.55	0.58	0.58
d, Delay for Lane Group [s/veh]	25.76	28.93	26.20	40.51	50.92	14.68	21.65	23.70
Lane Group LOS	C	C	C	D	D	B	C	C
Critical Lane Group	No	Yes	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	9.60	10.53	9.88	1.38	2.85	7.12	7.17	7.62
50th-Percentile Queue Length [ft/ln]	239.98	263.25	247.07	34.40	71.32	177.93	179.32	190.39
95th-Percentile Queue Length [veh/ln]	14.68	15.85	15.04	2.48	5.14	11.49	11.57	12.14
95th-Percentile Queue Length [ft/ln]	367.00	396.30	375.96	61.91	128.38	287.31	289.13	303.54

Movement, Approach, & Intersection Results

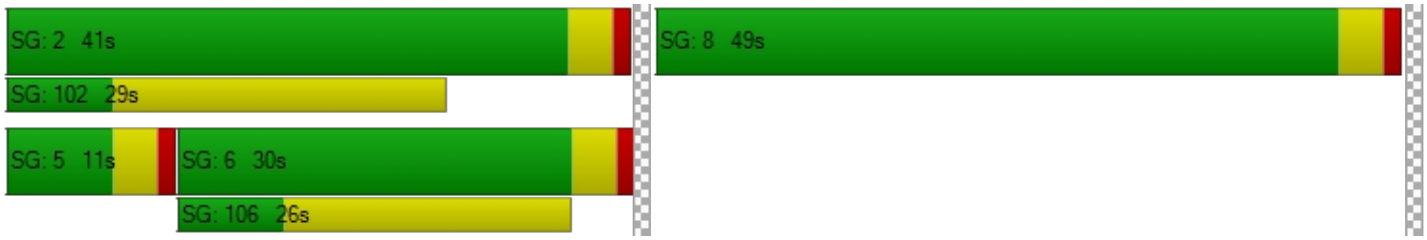
d_M, Delay for Movement [s/veh]	26.02	28.93	27.38	0.00	0.00	40.51	50.92	14.68	0.00	0.00	22.15	23.70
Movement LOS	C	C	C			D	D	B			C	C
d_A, Approach Delay [s/veh]	26.68			40.51			17.00			22.16		
Approach LOS	C			D			B			C		
d_I, Intersection Delay [s/veh]	22.63											
Intersection LOS	C											
Intersection V/C	0.699											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.713	2.035	0.000	0.000
Crosswalk LOS	B	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1000	156	822	578
d_b, Bicycle Delay [s]	11.26	38.28	15.62	22.77
l_b,int, Bicycle LOS Score for Intersection	5.058	1.560	2.538	2.297
Bicycle LOS	F	A	B	B

Sequence

Ring 1	-	2	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 17: Associated Road at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	32.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.813

Intersection Setup

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	154	211	73	170	335	168	217	1962	106	93	1698	102
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	154	211	73	170	335	168	217	1962	106	93	1698	102
Peak Hour Factor	0.8870	0.8870	0.8870	0.9320	0.9320	0.9320	0.9120	0.9120	0.9120	0.9620	0.9620	0.9620
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	43	59	21	46	90	45	59	538	29	24	441	27
Total Analysis Volume [veh/h]	174	238	82	182	359	180	238	2151	116	97	1765	106
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	39	0	12	40	0	21	53	0	11	43	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	28	0	0	29	0	0	26	0	0	25	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	115	115	115	115	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	23	23	8	24	24	17	61	61	7	51	51
g / C, Green / Cycle	0.06	0.20	0.20	0.07	0.21	0.21	0.15	0.53	0.53	0.06	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.05	0.09	0.08	0.05	0.19	0.09	0.13	0.39	0.41	0.05	0.24	0.26
s, saturation flow rate [veh/h]	3500	1900	1900	3500	1900	1900	1800	3800	1900	1800	5700	1900
c, Capacity [veh/h]	216	388	388	242	402	402	266	2000	1000	111	2509	836
d1, Uniform Delay [s]	53.32	39.93	39.68	52.61	44.11	39.52	48.16	21.27	21.79	53.56	23.81	24.28
k, delay calibration	0.11	0.11	0.11	0.11	0.17	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.98	0.75	0.66	4.71	10.32	0.78	10.23	2.59	5.83	18.45	0.88	2.98
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.81	0.43	0.40	0.75	0.89	0.45	0.89	0.75	0.77	0.87	0.55	0.58
d, Delay for Lane Group [s/veh]	60.30	40.68	40.35	57.32	54.43	40.31	58.39	23.86	27.62	72.01	24.69	27.26
Lane Group LOS	E	D	D	E	D	D	E	C	C	E	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.69	4.17	3.87	2.74	11.03	4.53	7.44	15.75	17.59	3.35	9.32	10.55
50th-Percentile Queue Length [ft/ln]	67.28	104.22	96.63	68.45	275.76	113.13	185.91	393.83	439.87	83.71	232.96	263.81
95th-Percentile Queue Length [veh/ln]	4.84	7.50	6.96	4.93	16.48	8.01	11.91	22.26	24.47	6.03	14.32	15.88
95th-Percentile Queue Length [ft/ln]	121.11	187.60	173.94	123.21	411.93	200.34	297.71	556.56	611.85	150.67	358.12	396.99

Movement, Approach, & Intersection Results

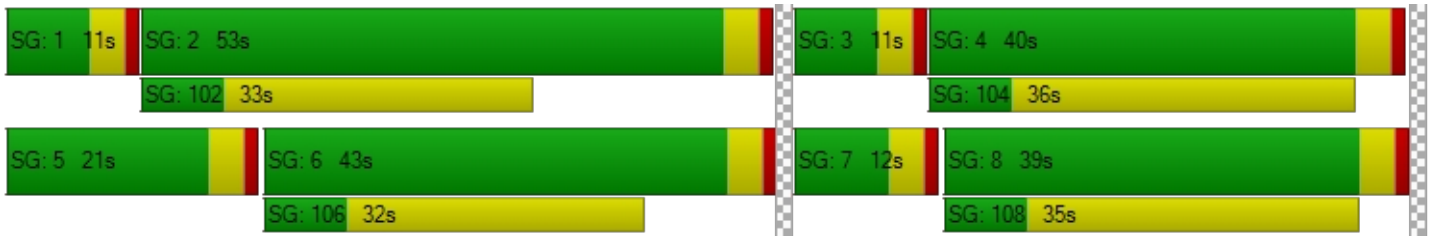
d_M, Delay for Movement [s/veh]	60.30	40.58	40.35	57.32	54.43	40.31	58.39	25.01	27.62	72.01	25.24	27.26
Movement LOS	E	D	D	E	D	D	E	C	C	E	C	C
d_A, Approach Delay [s/veh]	47.49			51.64			28.30			27.66		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	32.70											
Intersection LOS	C											
Intersection V/C	0.813											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	47.05	47.05	47.05	47.05
l_p,int, Pedestrian LOS Score for Intersection	2.519	2.676	3.301	3.271
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	608	626	852	678
d_b, Bicycle Delay [s]	27.84	27.15	18.96	25.13
l_b,int, Bicycle LOS Score for Intersection	1.967	2.749	2.937	2.371
Bicycle LOS	A	B	C	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 18: Castlegate Lane/Placentia Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	19.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.723

Intersection Setup

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	187	12	149	25	28	15	14	1931	373	178	1565	33
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	187	12	149	25	28	15	14	1931	373	178	1565	33
Peak Hour Factor	0.8320	0.8320	0.8320	0.6740	0.6740	0.6740	0.9510	0.9510	0.9510	0.8930	0.8930	0.8930
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	56	4	45	9	10	6	4	508	98	50	438	9
Total Analysis Volume [veh/h]	225	14	179	37	42	22	15	2030	392	199	1753	37
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	26	0	0	10	0	10	32	0	22	44	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	15	0	0	0	0	0	21	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	11	11	6	6	2	45	45	12	55	55
g / C, Green / Cycle	0.12	0.12	0.12	0.06	0.06	0.02	0.50	0.50	0.13	0.62	0.62
(v / s)_i Volume / Saturation Flow Rate	0.07	0.07	0.09	0.02	0.03	0.01	0.36	0.21	0.11	0.31	0.32
s, saturation flow rate [veh/h]	1750	1750	1900	1800	1900	1800	5700	1900	1800	3800	1900
c, Capacity [veh/h]	217	217	235	112	119	40	2869	956	239	2334	1167
d1, Uniform Delay [s]	37.15	37.17	38.22	40.47	41.02	43.47	17.27	14.01	38.11	9.73	9.91
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.17	2.20	5.04	1.69	3.77	5.69	1.50	1.30	7.30	0.78	1.69
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.55	0.55	0.76	0.33	0.54	0.37	0.71	0.41	0.83	0.50	0.53
d, Delay for Lane Group [s/veh]	39.33	39.37	43.26	42.16	44.79	49.16	18.77	15.31	45.40	10.51	11.60
Lane Group LOS	D	D	D	D	D	D	B	B	D	B	B
Critical Lane Group	No	No	Yes	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.57	2.58	4.09	0.83	1.49	0.39	10.40	5.04	4.70	6.00	6.64
50th-Percentile Queue Length [ft/ln]	64.18	64.58	102.35	20.77	37.20	9.75	259.88	126.09	117.44	150.02	166.04
95th-Percentile Queue Length [veh/ln]	4.62	4.65	7.37	1.50	2.68	0.70	15.68	8.73	8.25	10.02	10.87
95th-Percentile Queue Length [ft/ln]	115.52	116.24	184.23	37.38	66.96	17.55	392.07	218.17	206.30	250.46	271.70

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	39.35	39.37	43.26	42.16	44.79	44.79	49.16	18.77	15.31	45.40	10.87	11.60
Movement LOS	D	D	D	D	D	D	D	B	B	D	B	B
d_A, Approach Delay [s/veh]	41.02			43.82			18.40			14.34		
Approach LOS	D			D			B			B		
d_I, Intersection Delay [s/veh]	19.20											
Intersection LOS	B											
Intersection V/C	0.723											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.72	34.72	0.00	34.72
l_p,int, Pedestrian LOS Score for Intersection	2.387	1.994	0.000	3.183
Crosswalk LOS	B	A	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	488	133	622	888
d_b, Bicycle Delay [s]	25.73	39.24	21.40	13.92
l_b,int, Bicycle LOS Score for Intersection	2.249	1.726	2.900	2.654
Bicycle LOS	B	A	C	B

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Brea Mall Expansion, Brea

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Report File: N:\...\PM 2026+P.pdf

Scenario 8 PM 2026+P
4/12/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State College Boulevard at Lambert Road	Signalized	HCM 6th Edition	NB Left	0.886	42.2	D
2	SR-57 SB Ramps at Lambert Road	Signalized	HCM 6th Edition	WB Left	0.710	19.8	B
3	SR-57 NB Ramps at Lambert Road	Signalized	HCM 6th Edition	NB Left	0.661	15.0	B
4	Randolph Avenue at Birch Street	Signalized	HCM 6th Edition	NB Left	0.547	32.1	C
5	State College Boulevard at Birch Street	Signalized	HCM 6th Edition	NB Left	0.845	35.9	D
6	S Associated Road at Birch Street	Signalized	HCM 6th Edition	WB Left	0.706	28.5	C
7	Randolph Avenue at Madison Way	Signalized	HCM 6th Edition	WB Left	0.199	18.5	B
8	Randolph Avenue at Brea Mall	Signalized	HCM 6th Edition	EB Left	0.425	19.4	B
9	Brea Mall South at State College Boulevard	Signalized	HCM 6th Edition	SB Left	0.690	31.2	C
10	Harbor Boulevard at Imperial Highway	Signalized	HCM 6th Edition	NB Left	0.926	47.5	D
11	Puente Street at Imperial Highway	Signalized	HCM 6th Edition	WB Left	0.693	19.2	B
12	Brea Boulevard at Imperial Highway	Signalized	HCM 6th Edition	EB Left	0.888	42.0	D
13	Randolph Avenue at Imperial Highway	Signalized	HCM 6th Edition	WB Left	0.793	28.4	C
14	State College Boulevard at Imperial Highway	Signalized	HCM 6th Edition	WB Left	1.061	67.4	E
15	SR-57 SB Ramps at Imperial Highway	Signalized	HCM 6th Edition	SB Left	0.773	17.3	B
16	SR-57 NB Ramps at Imperial Highway	Signalized	HCM 6th Edition	EB Left	0.799	23.5	C
17	Associated Road at Imperial Highway	Signalized	HCM 6th Edition	NB Left	0.918	46.3	D
18	Castlegate Lane/Placentia	Signalized	HCM 6th	EB Left	0.837	26.9	C

16	Avenue at Imperial Highway	Signalized	Edition	EB Left	0.857	26.9	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: State College Boulevard at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	42.2
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.886

Intersection Setup

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	326	617	323	587	415	16	40	1506	269	420	1200	741
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	326	617	323	587	415	16	40	1506	269	420	1200	741
Peak Hour Factor	0.9470	0.9470	0.9470	0.9220	0.9220	0.9220	0.8360	0.8360	0.8360	0.9740	0.9740	0.9740
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	86	163	85	159	113	4	12	450	80	108	308	190
Total Analysis Volume [veh/h]	344	652	341	637	450	17	48	1801	322	431	1232	761
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	17	33	0	28	44	0	10	38	0	21	49	49
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	0	0	0	33	0	0	28	0	0	22	22
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	13	25	25	25	24	36	36	5	38	38	17	50	78
g / C, Green / Cycle	0.11	0.21	0.21	0.21	0.20	0.30	0.30	0.04	0.32	0.32	0.14	0.42	0.65
(v / s)_i Volume / Saturation Flow Rate	0.10	0.18	0.18	0.16	0.18	0.12	0.12	0.01	0.28	0.28	0.12	0.22	0.40
s, saturation flow rate [veh/h]	3500	1900	1900	1900	3500	1900	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	381	394	394	394	700	568	568	143	1826	609	486	2384	1238
d1, Uniform Delay [s]	52.87	46.15	45.98	44.83	46.96	33.68	33.62	56.01	38.50	38.44	50.78	25.91	12.15
k, delay calibration	0.11	0.26	0.25	0.18	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.04	13.90	12.25	5.26	4.98	0.48	0.47	1.38	6.12	15.57	5.68	0.80	2.29
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.90	0.88	0.87	0.77	0.91	0.41	0.41	0.34	0.87	0.87	0.89	0.52	0.61
d, Delay for Lane Group [s/veh]	60.91	60.05	58.23	50.09	51.94	34.16	34.09	57.38	44.63	54.01	56.46	26.72	14.44
Lane Group LOS	E	E	E	D	D	C	C	E	D	D	E	C	B
Critical Lane Group	No	Yes	No	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.54	11.56	11.17	9.04	9.75	5.57	5.49	0.74	15.62	17.13	6.73	8.82	11.85
50th-Percentile Queue Length [ft/ln]	138.6	289.0	279.3	226.0	243.66	139.25	137.25	18.39	390.40	428.18	168.32	220.47	296.19
95th-Percentile Queue Length [veh/ln]	9.41	17.14	16.66	13.97	14.87	9.44	9.33	1.32	22.10	23.91	10.99	13.69	17.49
95th-Percentile Queue Length [ft/ln]	235.1	428.4	416.3	349.2	371.66	236.01	233.31	33.11	552.42	597.86	274.71	342.23	437.32

Movement, Approach, & Intersection Results

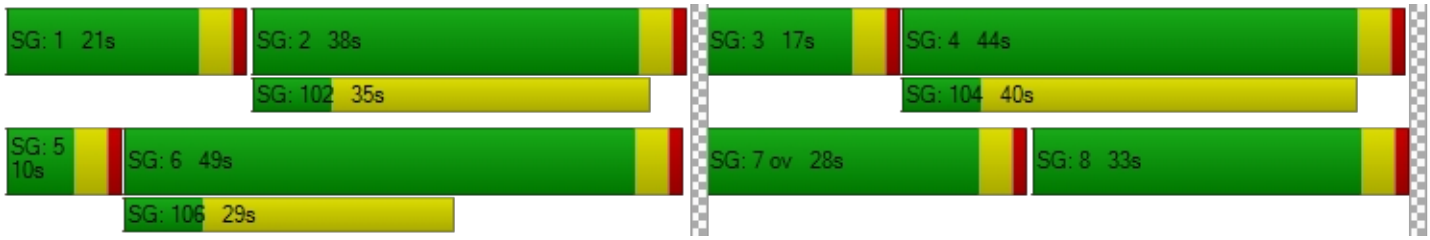
d_M, Delay for Movement [s/veh]	60.91	59.21	50.35	51.94	34.13	34.09	57.38	45.70	54.01	56.46	26.72	14.44
Movement LOS	E	E	D	D	C	C	E	D	D	E	C	B
d_A, Approach Delay [s/veh]	57.55			44.40			47.19			28.15		
Approach LOS	E			D			D			C		
d_I, Intersection Delay [s/veh]	42.16											
Intersection LOS	D											
Intersection V/C	0.886											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.52	49.52	49.52	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.961	2.883	3.271	0.000
Crosswalk LOS	C	C	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	483	666	567	750
d_b, Bicycle Delay [s]	34.52	26.68	30.83	23.45
l_b,int, Bicycle LOS Score for Intersection	2.663	2.470	2.455	2.893
Bicycle LOS	B	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: SR-57 SB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	19.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.710

Intersection Setup

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	0	0	0	470	0	877	0	1481	857	257	1793	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	470	0	877	0	1481	857	257	1793	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9480	1.0000	0.9480	1.0000	0.8820	0.8820	0.9530	0.9530	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	124	0	231	0	420	243	67	470	0
Total Analysis Volume [veh/h]	0	0	0	496	0	925	0	1679	972	270	1881	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	7	0	0	0	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	6	0	0	0	6	0	6	6	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	42	0	0	0	35	0	13	48	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	12	0	0	20	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall				No				No		No	No	
Maximum Recall				No				No		No	No	
Pedestrian Recall				No				No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	R	C	R	L	C
C, Cycle Length [s]		90	90	90	90	90	90
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		27	27	42	42	9	55
g / C, Green / Cycle		0.30	0.30	0.47	0.47	0.10	0.61
(v / s)_i Volume / Saturation Flow Rate		0.14	0.24	0.29	0.26	0.08	0.33
s, saturation flow rate [veh/h]		3500	3800	5700	3800	3500	5700
c, Capacity [veh/h]		1054	1145	2662	1775	345	3477
d1, Uniform Delay [s]		25.61	29.06	18.13	17.18	39.65	10.22
k, delay calibration		0.11	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.33	1.41	1.15	1.22	3.93	0.61
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.47	0.81	0.63	0.55	0.78	0.54
d, Delay for Lane Group [s/veh]		25.94	30.46	19.27	18.40	43.58	10.83
Lane Group LOS		C	C	B	B	D	B
Critical Lane Group		No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]		4.26	9.14	8.56	7.11	3.07	6.62
50th-Percentile Queue Length [ft/ln]		106.62	228.62	213.95	177.82	76.64	165.56
95th-Percentile Queue Length [veh/ln]		7.65	14.10	13.36	11.49	5.52	10.84
95th-Percentile Queue Length [ft/ln]		191.28	352.60	333.89	287.16	137.94	271.06

Movement, Approach, & Intersection Results

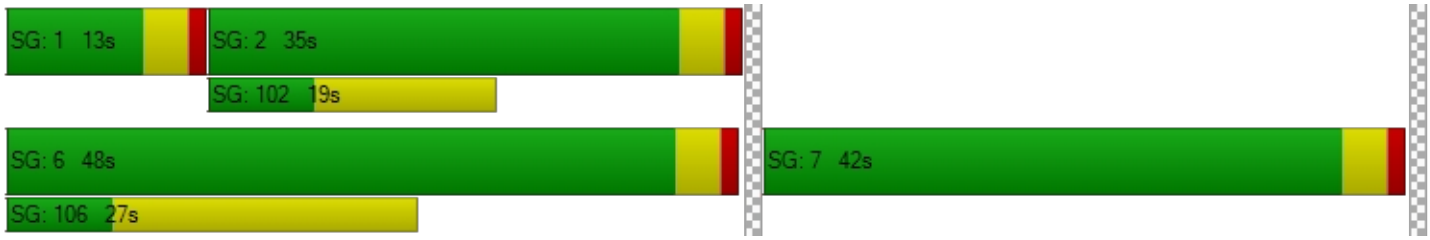
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	25.94	0.00	30.46	0.00	19.27	18.40	43.58	10.83	0.00
Movement LOS				C		C		B	B	D	B	
d_A, Approach Delay [s/veh]	0.00			28.89			18.95			14.94		
Approach LOS	A			C			B			B		
d_I, Intersection Delay [s/veh]	19.84											
Intersection LOS	B											
Intersection V/C	0.710											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.320	2.477	0.000	0.000
Crosswalk LOS	B	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	844	689	978
d_b, Bicycle Delay [s]	45.01	15.03	19.35	11.76
l_b,int, Bicycle LOS Score for Intersection	4.132	1.560	3.018	2.743
Bicycle LOS	D	A	C	B

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: SR-57 NB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	15.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.661

Intersection Setup

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			No			No			No		

Volumes

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	693	0	301	0	0	0	0	1573	588	0	1174	539
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	693	0	301	0	0	0	0	1573	588	0	1174	539
Peak Hour Factor	0.8400	1.0000	0.8400	1.0000	1.0000	1.0000	0.9710	0.8440	0.8440	1.0000	0.9530	0.9530
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	206	0	90	0	0	0	0	466	174	0	308	0
Total Analysis Volume [veh/h]	825	0	358	0	0	0	0	1864	697	0	1232	0
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Permiss	Split	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna
Signal Group	3	0	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	0	0	0	0	0	0	6	0	0	6	0
Maximum Green [s]	30	0	0	0	0	0	0	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	54	0	0	0	0	0	0	36	0	0	36	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	25	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R		C	C	R	C
C, Cycle Length [s]	90	90		90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	26	26		56	56	56	56
g / C, Green / Cycle	0.29	0.29		0.63	0.63	0.63	0.63
(v / s)_i Volume / Saturation Flow Rate	0.24	0.19		0.34	0.34	0.34	0.22
s, saturation flow rate [veh/h]	3500	1900		3800	1900	1900	5700
c, Capacity [veh/h]	998	542		2378	1189	1189	3567
d1, Uniform Delay [s]	30.03	28.28		9.48	9.48	9.48	8.02
k, delay calibration	0.11	0.11		0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.82	1.39		0.88	1.75	1.75	0.27
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.83	0.66		0.54	0.54	0.54	0.35
d, Delay for Lane Group [s/veh]	31.85	29.67		10.36	11.23	11.23	8.29
Lane Group LOS	C	C		B	B	B	A
Critical Lane Group	Yes	No		Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	8.32	6.81		6.54	6.83	6.83	3.48
50th-Percentile Queue Length [ft/ln]	208.12	170.16		163.52	170.72	170.72	86.97
95th-Percentile Queue Length [veh/ln]	13.06	11.09		10.73	11.11	11.11	6.26
95th-Percentile Queue Length [ft/ln]	326.41	277.13		268.37	277.86	277.86	156.55

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	31.85	0.00	29.67	0.00	0.00	0.00	0.00	10.44	11.23	0.00	8.29	0.00
Movement LOS	C		C					B	B		A	
d_A, Approach Delay [s/veh]	31.19			0.00			10.80			8.29		
Approach LOS	C			A			B			A		
d_I, Intersection Delay [s/veh]	15.03											
Intersection LOS	B											
Intersection V/C	0.661											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.63	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.666	0.000	0.000	0.000
Crosswalk LOS	B	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1112	0	712	712
d_b, Bicycle Delay [s]	8.86	44.96	18.65	18.65
l_b,int, Bicycle LOS Score for Intersection	1.560	4.132	2.968	2.237
Bicycle LOS	A	D	C	B

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 4: Randolph Avenue at Birch Street

Control Type:	Signalized	Delay (sec / veh):	32.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.547

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Base Volume Input [veh/h]	141	59	175	52	51	110	80	730	112	198	1154	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	141	59	175	52	51	110	80	730	112	198	1154	40
Peak Hour Factor	0.8740	0.8740	0.8740	0.7860	0.7860	0.7860	0.9250	0.9250	0.9250	0.9540	0.9540	0.9540
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	40	17	50	17	16	35	22	197	30	52	302	10
Total Analysis Volume [veh/h]	161	68	200	66	65	140	86	789	121	208	1210	42
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	40	0	0	40	0	11	31	0	19	39	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	25	0	0	19	0	0	18	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	12	12	12	12	6	54	54	12	60	60
g / C, Green / Cycle	0.13	0.13	0.13	0.13	0.13	0.06	0.60	0.60	0.14	0.67	0.67
(v / s)_i Volume / Saturation Flow Rate	0.09	0.04	0.11	0.04	0.11	0.05	0.25	0.23	0.12	0.32	0.02
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1800	1900	1900	1800	3800	1900
c, Capacity [veh/h]	106	257	257	234	257	114	1130	1130	246	2540	1270
d1, Uniform Delay [s]	35.79	34.95	37.66	34.98	37.77	41.51	9.80	9.66	37.94	7.27	5.06
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	246.74	0.54	5.08	0.65	5.65	9.70	1.11	1.03	7.69	0.64	0.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.53	0.26	0.78	0.28	0.80	0.76	0.41	0.39	0.84	0.48	0.03
d, Delay for Lane Group [s/veh]	282.53	35.49	42.74	35.63	43.42	51.22	10.91	10.68	45.62	7.91	5.11
Lane Group LOS	F	D	D	D	D	D	B	B	D	A	A
Critical Lane Group	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	9.34	1.36	4.56	1.33	4.71	2.16	4.81	4.51	4.93	5.00	0.25
50th-Percentile Queue Length [ft/ln]	233.42	34.05	113.91	33.20	117.86	54.12	120.17	112.85	123.21	124.92	6.20
95th-Percentile Queue Length [veh/ln]	16.46	2.45	8.06	2.39	8.28	3.90	8.40	8.00	8.57	8.66	0.45
95th-Percentile Queue Length [ft/ln]	411.62	61.29	201.42	59.75	206.88	97.41	210.06	199.96	214.22	216.56	11.16

Movement, Approach, & Intersection Results

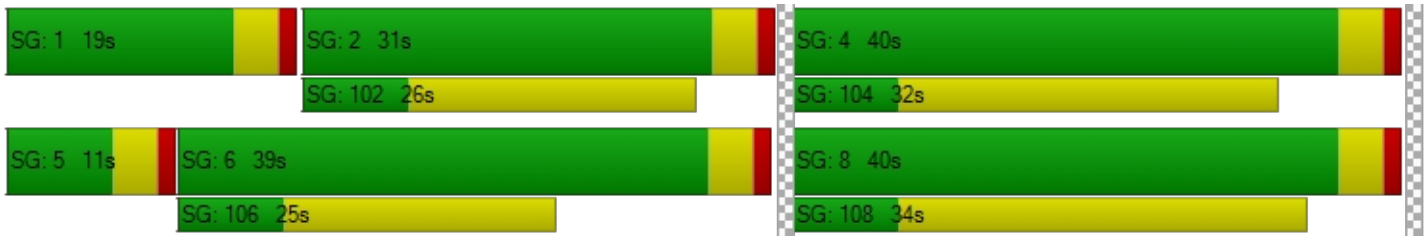
d_M, Delay for Movement [s/veh]	282.53	35.49	42.74	35.63	43.42	43.42	51.22	10.82	10.68	45.62	7.91	5.11
Movement LOS	F	D	D	D	D	D	D	B	B	D	A	A
d_A, Approach Delay [s/veh]	131.58			41.52			14.29			13.20		
Approach LOS	F			D			B			B		
d_I, Intersection Delay [s/veh]	32.07											
Intersection LOS	C											
Intersection V/C	0.547											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.70	34.70	34.70	34.70
l_p,int, Pedestrian LOS Score for Intersection	2.331	2.092	3.017	2.955
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	800	800	600	777
d_b, Bicycle Delay [s]	16.22	16.22	22.07	16.83
l_b,int, Bicycle LOS Score for Intersection	2.267	2.007	2.381	2.764
Bicycle LOS	B	B	B	C

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: State College Boulevard at Birch Street

Control Type:	Signalized	Delay (sec / veh):	35.9
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.845

Intersection Setup

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Base Volume Input [veh/h]	148	431	164	351	393	328	293	801	162	152	1025	673
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	148	431	164	351	393	328	293	801	162	152	1025	673
Peak Hour Factor	0.9210	0.9210	0.9210	0.9620	0.9620	0.9620	0.9110	0.9110	0.9110	0.9550	0.9550	0.9550
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	40	117	45	91	102	85	80	220	44	40	268	176
Total Analysis Volume [veh/h]	161	468	178	365	409	341	322	879	178	159	1073	705
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	10	39	0	18	47	0	16	42	0	11	37	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	28	0	0	30	0	0	28	0	0	26	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	19	19	13	27	27	12	55	55	7	49	49
g / C, Green / Cycle	0.05	0.17	0.17	0.12	0.24	0.24	0.11	0.50	0.50	0.06	0.45	0.45
(v / s)_i Volume / Saturation Flow Rate	0.05	0.12	0.09	0.10	0.21	0.18	0.09	0.23	0.09	0.05	0.28	0.37
s, saturation flow rate [veh/h]	3500	3800	1900	3500	1900	1900	3500	3800	1900	3500	3800	1900
c, Capacity [veh/h]	194	663	332	427	458	458	382	1881	940	221	1706	853
d1, Uniform Delay [s]	51.49	42.78	41.38	47.38	40.26	38.74	48.11	18.27	15.50	50.62	23.30	26.59
k, delay calibration	0.11	0.11	0.11	0.11	0.13	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.85	1.39	1.35	4.97	6.60	2.54	5.07	0.84	0.45	4.36	1.77	9.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.83	0.71	0.54	0.85	0.88	0.75	0.84	0.47	0.19	0.72	0.63	0.83
d, Delay for Lane Group [s/veh]	60.34	44.17	42.73	52.35	46.86	41.28	53.18	19.11	15.94	54.97	25.07	35.61
Lane Group LOS	E	D	D	D	D	D	D	B	B	D	C	D
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.43	6.09	4.52	5.18	11.28	8.90	4.59	7.38	2.58	2.28	10.84	17.76
50th-Percentile Queue Length [ft/ln]	60.81	152.37	112.89	129.44	282.00	222.62	114.70	184.52	64.42	56.99	270.97	443.99
95th-Percentile Queue Length [veh/ln]	4.38	10.14	8.00	8.91	16.79	13.80	8.10	11.84	4.64	4.10	16.24	24.67
95th-Percentile Queue Length [ft/ln]	109.46	253.59	200.01	222.74	419.70	344.97	202.52	295.90	115.95	102.59	405.95	616.77

Movement, Approach, & Intersection Results

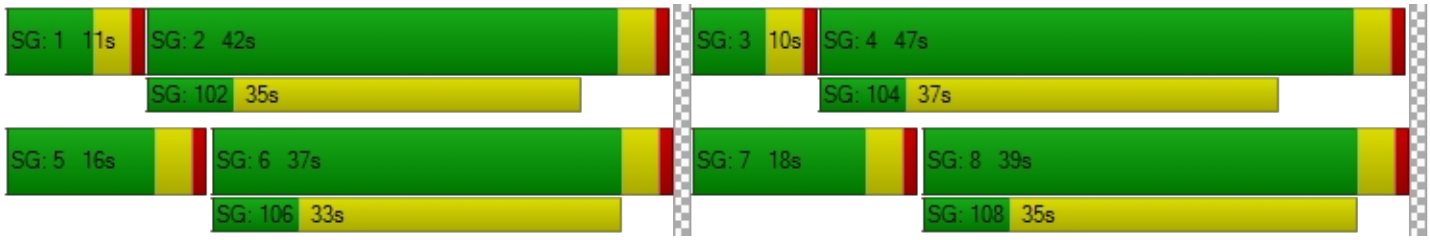
d_M, Delay for Movement [s/veh]	60.34	44.17	42.73	52.35	46.80	41.28	53.18	19.11	15.94	54.97	25.07	35.61
Movement LOS	E	D	D	D	D	D	D	B	B	D	C	D
d_A, Approach Delay [s/veh]	47.08			46.93			26.66			31.36		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	35.86											
Intersection LOS	D											
Intersection V/C	0.845											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	44.58	44.58	44.58	44.58
l_p,int, Pedestrian LOS Score for Intersection	2.820	2.887	3.015	3.071
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	636	781	691	600
d_b, Bicycle Delay [s]	25.59	20.43	23.59	26.97
l_b,int, Bicycle LOS Score for Intersection	2.225	2.479	2.697	3.158
Bicycle LOS	B	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: S Associated Road at Birch Street

Control Type:	Signalized	Delay (sec / veh):	28.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.706

Intersection Setup

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Base Volume Input [veh/h]	500	33	355	11	20	9	16	934	314	295	1324	18
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	500	33	355	11	20	9	16	934	314	295	1324	18
Peak Hour Factor	0.9370	0.9370	0.9370	0.8500	0.8500	0.8500	0.9910	0.9910	0.9910	0.9420	0.9420	0.9420
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	133	9	95	3	6	3	4	236	79	78	351	5
Total Analysis Volume [veh/h]	534	35	379	13	24	11	16	942	317	313	1406	19
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	8	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups			1,8									
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	6	0	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	30	0	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	28	65	65	0	37	0	10	40	0	15	45	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	26	26	0	26	0	0	27	0	0	26	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No		No		No	No		No	No	
Maximum Recall	No	No	No		No		No	No		No	No	
Pedestrian Recall	No	No	No		No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	21	29	44	5	5	3	68	68	11	76	76
g / C, Green / Cycle	0.17	0.25	0.37	0.04	0.04	0.02	0.56	0.56	0.09	0.63	0.63
(v / s)_i Volume / Saturation Flow Rate	0.15	0.02	0.20	0.01	0.02	0.01	0.34	0.32	0.09	0.38	0.37
s, saturation flow rate [veh/h]	3500	1900	1900	1800	1900	1800	1900	1900	3500	1900	1900
c, Capacity [veh/h]	602	467	705	80	77	38	1069	1069	322	1203	1203
d1, Uniform Delay [s]	48.55	34.79	29.67	55.67	56.31	58.02	17.53	16.85	54.35	12.92	12.91
k, delay calibration	0.11	0.11	0.30	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.65	0.07	1.78	0.93	4.19	7.21	2.63	2.17	17.64	2.15	2.14
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.89	0.07	0.54	0.16	0.46	0.42	0.61	0.57	0.97	0.59	0.59
d, Delay for Lane Group [s/veh]	53.20	34.86	31.45	56.61	60.50	65.23	20.16	19.02	71.98	15.08	15.05
Lane Group LOS	D	C	C	E	E	E	C	B	E	B	B
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	8.18	0.80	8.92	0.40	1.13	0.56	12.46	11.00	5.50	11.37	11.33
50th-Percentile Queue Length [ft/ln]	204.45	20.07	222.98	10.05	28.19	13.92	311.45	275.00	137.41	284.15	283.30
95th-Percentile Queue Length [veh/ln]	12.87	1.45	13.82	0.72	2.03	1.00	18.25	16.44	9.34	16.89	16.85
95th-Percentile Queue Length [ft/ln]	321.70	36.13	345.43	18.09	50.74	25.05	456.16	410.98	233.53	422.37	421.32

Movement, Approach, & Intersection Results

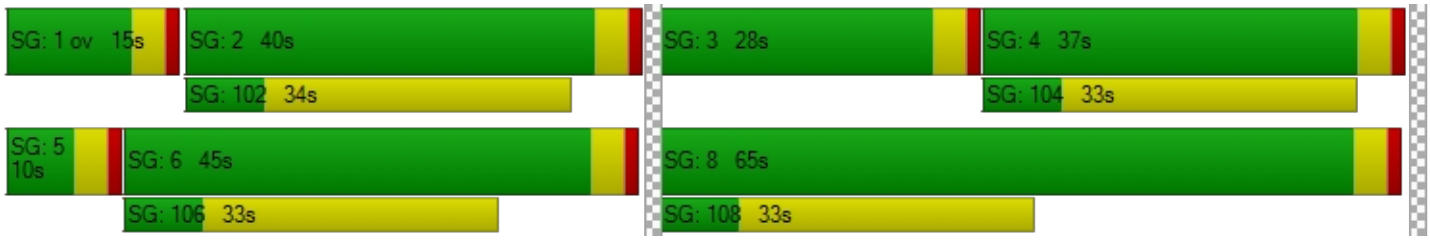
d_M, Delay for Movement [s/veh]	53.20	34.86	31.45	56.61	60.50	60.50	65.23	19.81	19.02	71.98	15.07	15.05
Movement LOS	D	C	C	E	E	E	E	B	B	E	B	B
d_A, Approach Delay [s/veh]	43.83			59.45			20.18			25.32		
Approach LOS	D			E			C			C		
d_I, Intersection Delay [s/veh]	28.47											
Intersection LOS	C											
Intersection V/C	0.706											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.51	49.51	49.51	49.51
l_p,int, Pedestrian LOS Score for Intersection	2.727	1.992	2.943	2.984
Crosswalk LOS	B	A	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1017	550	600	683
d_b, Bicycle Delay [s]	14.51	31.54	29.41	26.01
l_b,int, Bicycle LOS Score for Intersection	3.124	1.639	2.611	2.993
Bicycle LOS	C	A	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 7: Randolph Avenue at Madison Way

Control Type:	Signalized	Delay (sec / veh):	18.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.199

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Base Volume Input [veh/h]	48	332	43	28	277	30	65	4	52	75	4	38
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	48	332	43	28	277	30	65	4	52	75	4	38
Peak Hour Factor	0.9560	0.9560	0.9560	0.9590	0.9590	0.9590	0.6990	0.6990	0.6990	0.8710	0.8710	0.8710
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	87	11	7	72	8	23	1	19	22	1	11
Total Analysis Volume [veh/h]	50	347	45	29	289	31	93	6	74	86	5	44
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	6	6	0	6	6	0	0	6	0	0	6	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	26	0	10	25	0	0	54	0	0	54	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	15	0	0	12	0	0	19	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	68	68	3	67	67	7	7	7	7
g / C, Green / Cycle	0.05	0.76	0.76	0.04	0.74	0.74	0.08	0.08	0.08	0.08
(v / s)_i Volume / Saturation Flow Rate	0.03	0.10	0.10	0.02	0.09	0.08	0.05	0.04	0.05	0.03
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1900	1800	1900	1800	1900
c, Capacity [veh/h]	88	1435	1435	64	1410	1410	139	145	111	145
d1, Uniform Delay [s]	41.91	3.02	3.01	42.56	3.28	3.27	40.53	40.12	40.36	39.45
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.70	0.20	0.20	4.91	0.17	0.16	5.42	3.28	11.02	1.37
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.57	0.14	0.13	0.45	0.11	0.11	0.67	0.55	0.78	0.34
d, Delay for Lane Group [s/veh]	47.61	3.22	3.20	47.47	3.44	3.43	45.94	43.40	51.38	40.82
Lane Group LOS	D	A	A	D	A	A	D	D	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	1.21	0.79	0.77	0.71	0.69	0.68	2.19	1.82	2.17	1.07
50th-Percentile Queue Length [ft/ln]	30.37	19.86	19.24	17.84	17.28	16.90	54.84	45.53	54.15	26.82
95th-Percentile Queue Length [veh/ln]	2.19	1.43	1.39	1.28	1.24	1.22	3.95	3.28	3.90	1.93
95th-Percentile Queue Length [ft/ln]	54.67	35.76	34.63	32.12	31.10	30.42	98.71	81.96	97.47	48.27

Movement, Approach, & Intersection Results

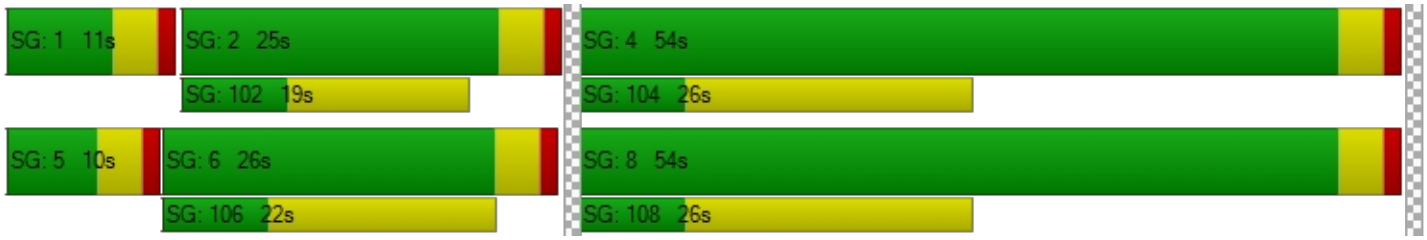
d_M, Delay for Movement [s/veh]	47.61	3.21	3.20	47.47	3.44	3.43	45.94	43.40	43.40	51.38	40.82	40.82
Movement LOS	D	A	A	D	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	8.23			7.10			44.77			47.55		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	18.45											
Intersection LOS	B											
Intersection V/C	0.199											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	34.68	34.68
l_p,int, Pedestrian LOS Score for Intersection	2.595	2.594	2.024	2.010
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	489	467	1111	1111
d_b, Bicycle Delay [s]	25.70	26.46	8.90	8.90
l_b,int, Bicycle LOS Score for Intersection	1.924	1.848	1.845	1.782
Bicycle LOS	A	A	A	A

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 8: Randolph Avenue at Brea Mall

Control Type:	Signalized	Delay (sec / veh):	19.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.425

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Base Volume Input [veh/h]	17	338	414	54	373	20	18	3	12	314	3	56
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	338	414	54	373	20	18	3	12	314	3	56
Peak Hour Factor	0.9560	0.9560	0.9560	0.9310	0.9310	0.9310	0.9380	0.9380	0.9380	0.8620	0.8620	0.8620
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	88	108	15	100	5	5	1	3	91	1	16
Total Analysis Volume [veh/h]	18	354	433	58	401	21	19	3	13	364	3	65
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	6	6	0	6	6	0	0	6	0	0	6	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	29	0	10	29	0	0	30	0	0	31	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	17	0	0	18	0	0	19	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	R	L	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	69	61	61	69	63	63	4	4	15	15
g / C, Green / Cycle	0.69	0.61	0.61	0.69	0.63	0.63	0.04	0.04	0.15	0.15
(v / s)_i Volume / Saturation Flow Rate	0.01	0.19	0.23	0.03	0.11	0.11	0.01	0.01	0.12	0.11
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1900	1800	1900	1800	1900
c, Capacity [veh/h]	1264	1151	1151	1135	1197	1197	68	72	266	281
d1, Uniform Delay [s]	4.73	9.57	10.08	4.84	7.71	7.70	46.89	46.63	41.37	40.88
k, delay calibration	0.11	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.00	0.69	0.94	0.09	0.32	0.32	2.69	1.19	6.36	4.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.01	0.31	0.38	0.05	0.18	0.18	0.32	0.18	0.82	0.75
d, Delay for Lane Group [s/veh]	4.73	10.26	11.02	4.92	8.04	8.02	49.57	47.82	47.73	44.98
Lane Group LOS	A	B	B	A	A	A	D	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.10	3.73	4.82	0.36	1.87	1.84	0.58	0.34	5.68	5.29
50th-Percentile Queue Length [ft/ln]	2.59	93.15	120.45	9.07	46.79	46.11	14.56	8.40	141.94	132.20
95th-Percentile Queue Length [veh/ln]	0.19	6.71	8.42	0.65	3.37	3.32	1.05	0.60	9.59	9.06
95th-Percentile Queue Length [ft/ln]	4.65	167.67	210.44	16.32	84.23	82.99	26.20	15.12	239.64	226.48

Movement, Approach, & Intersection Results

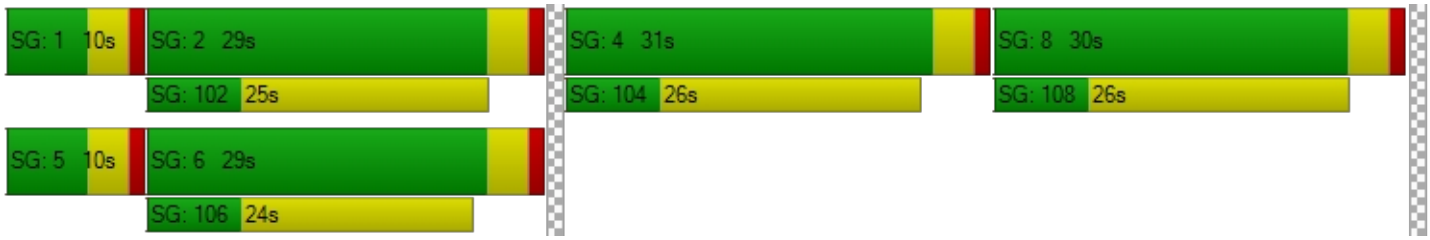
d_M, Delay for Movement [s/veh]	4.73	10.26	11.02	4.92	8.03	8.02	49.57	49.57	47.82	46.64	44.98	44.98
Movement LOS	A	B	B	A	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	10.55			7.65			48.92			46.38		
Approach LOS	B			A			D			D		
d_I, Intersection Delay [s/veh]	19.36											
Intersection LOS	B											
Intersection V/C	0.425											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	39.62	39.62	39.62	39.62
l_p,int, Pedestrian LOS Score for Intersection	2.613	2.484	1.987	2.298
Crosswalk LOS	B	B	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	500	500	520	540
d_b, Bicycle Delay [s]	28.14	28.14	27.40	26.66
l_b,int, Bicycle LOS Score for Intersection	2.224	1.956	1.617	2.272
Bicycle LOS	B	A	A	B

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 9: Brea Mall South at State College Boulevard

Control Type:	Signalized	Delay (sec / veh):	31.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.690

Intersection Setup

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Base Volume Input [veh/h]	144	25	67	56	19	409	595	567	23	99	467	48
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	144	25	67	56	19	409	595	567	23	99	467	48
Peak Hour Factor	0.8330	0.8330	0.8330	0.9000	0.9000	0.9000	0.8700	0.8700	0.8700	0.9090	0.9090	0.9090
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	43	8	20	16	5	114	171	163	7	27	128	13
Total Analysis Volume [veh/h]	173	30	80	62	21	454	684	652	26	109	514	53
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	4	5	2	0	1	6	0
Auxiliary Signal Groups						4,5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	6	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	30	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	37	0	0	10	10	41	36	0	37	32	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	26	0	0	0	0	0	20	0	0	21	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No	No	No	No		No	No	
Maximum Recall		No			No	No	No	No		No	No	
Pedestrian Recall		No			No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	C	C	R	L	C	C	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	11	11	6	6	53	28	78	78	9	60	60
g / C, Green / Cycle	0.09	0.09	0.09	0.05	0.05	0.44	0.23	0.65	0.65	0.08	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.04	0.07	0.04	0.03	0.01	0.24	0.20	0.18	0.18	0.06	0.15	0.15
s, saturation flow rate [veh/h]	1800	1800	1900	1800	1900	1900	3500	1900	1900	1800	1900	1900
c, Capacity [veh/h]	197	215	171	93	98	833	807	1232	1232	139	940	940
d1, Uniform Delay [s]	51.90	53.54	51.92	55.96	54.64	24.87	44.21	9.06	9.04	54.46	18.06	17.97
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.42	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.21	2.62	1.98	8.03	1.08	2.15	2.59	0.56	0.55	9.38	0.84	0.81
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.38	0.59	0.47	0.67	0.21	0.54	0.85	0.28	0.27	0.79	0.31	0.30
d, Delay for Lane Group [s/veh]	53.11	56.15	53.90	64.00	55.72	27.02	46.80	9.62	9.59	63.84	18.91	18.78
Lane Group LOS	D	E	D	E	E	C	D	A	A	E	B	B
Critical Lane Group	No	Yes	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.22	3.93	2.39	2.05	0.64	9.96	9.98	3.85	3.80	3.60	4.95	4.77
50th-Percentile Queue Length [ft/ln]	55.52	98.35	59.68	51.36	16.01	249.04	249.44	96.30	94.97	90.01	123.66	119.34
95th-Percentile Queue Length [veh/ln]	4.00	7.08	4.30	3.70	1.15	15.14	15.16	6.93	6.84	6.48	8.59	8.36
95th-Percentile Queue Length [ft/ln]	99.94	177.03	107.43	92.45	28.82	378.44	378.94	173.34	170.95	162.01	214.84	208.92

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	54.77	56.15	53.90	64.00	55.72	27.02	46.80	9.60	9.59	63.84	18.85	18.78
Movement LOS	D	E	D	E	E	C	D	A	A	E	B	B
d_A, Approach Delay [s/veh]	54.71			32.41			28.28			26.10		
Approach LOS	D			C			C			C		
d_I, Intersection Delay [s/veh]	31.16											
Intersection LOS	C											
Intersection V/C	0.690											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.54	49.54	0.00	49.54
l_p,int, Pedestrian LOS Score for Intersection	2.399	2.568	0.000	2.600
Crosswalk LOS	B	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	550	100	533	466
d_b, Bicycle Delay [s]	31.57	54.18	32.30	35.30
l_b,int, Bicycle LOS Score for Intersection	2.027	2.003	2.683	2.117
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 10: Harbor Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	47.5
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.926

Intersection Setup

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	443	1174	232	280	976	418	320	1309	298	450	1613	287
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	443	1174	232	280	976	418	320	1309	298	450	1613	287
Peak Hour Factor	0.9550	0.9550	0.9550	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9450	0.9450	0.9450
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	116	307	61	74	258	110	85	346	79	119	427	76
Total Analysis Volume [veh/h]	464	1229	243	296	1032	442	338	1384	315	476	1707	304
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	19	42	0	16	39	0	17	42	0	20	45	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	31	0	0	28	0	0	31	0	0	29	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	35	35	12	32	32	13	41	41	16	44	44
g / C, Green / Cycle	0.13	0.29	0.29	0.10	0.26	0.26	0.11	0.34	0.34	0.13	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.13	0.22	0.13	0.08	0.18	0.23	0.10	0.30	0.29	0.14	0.30	0.16
s, saturation flow rate [veh/h]	3500	5700	1900	3500	5700	1900	3500	3800	1900	3500	5700	1900
c, Capacity [veh/h]	440	1638	546	353	1496	499	383	1309	654	469	2105	702
d1, Uniform Delay [s]	52.50	38.88	34.97	53.04	39.90	42.58	52.74	36.94	36.45	52.01	34.11	28.45
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.31	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	35.76	0.71	0.57	5.33	0.58	13.84	6.81	8.35	12.84	22.88	3.53	1.95
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.05	0.75	0.44	0.84	0.69	0.89	0.88	0.87	0.85	1.01	0.81	0.43
d, Delay for Lane Group [s/veh]	88.26	39.59	35.54	58.38	40.48	56.42	59.55	45.29	49.28	74.89	37.64	30.40
Lane Group LOS	F	D	D	E	D	E	E	D	D	F	D	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	8.81	11.00	5.90	4.65	9.19	14.41	5.38	17.07	17.19	8.54	15.43	6.95
50th-Percentile Queue Length [ft/ln]	220.23	274.93	147.40	116.15	229.73	360.20	134.56	426.66	429.75	213.51	385.79	173.72
95th-Percentile Queue Length [veh/ln]	13.98	16.44	9.88	8.18	14.16	20.63	9.19	23.84	23.99	13.42	21.87	11.27
95th-Percentile Queue Length [ft/ln]	349.52	410.89	246.96	204.52	354.02	515.83	229.68	596.04	599.74	335.40	546.85	281.80

Movement, Approach, & Intersection Results

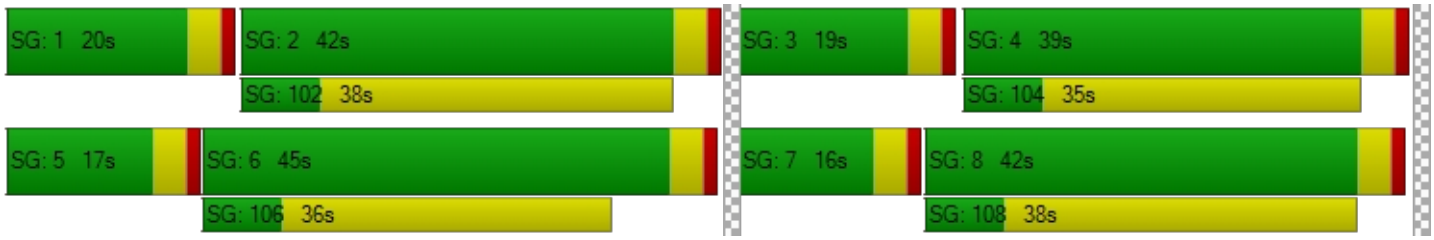
d_M, Delay for Movement [s/veh]	88.26	39.59	35.54	58.38	40.48	56.42	59.55	45.98	49.28	74.89	37.64	30.40
Movement LOS	F	D	D	E	D	E	E	D	D	F	D	C
d_A, Approach Delay [s/veh]	50.75			47.45			48.74			43.89		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	47.47											
Intersection LOS	D											
Intersection V/C	0.926											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.54	49.54	49.54	49.54
l_p,int, Pedestrian LOS Score for Intersection	3.270	3.257	3.306	3.341
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	633	583	633	683
d_b, Bicycle Delay [s]	28.04	30.13	28.04	26.03
l_b,int, Bicycle LOS Score for Intersection	2.624	2.533	2.680	2.927
Bicycle LOS	B	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 11: Puente Street at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	19.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.693

Intersection Setup

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	36	49	88	196	108	217	139	1640	38	109	1833	281
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	36	49	88	196	108	217	139	1640	38	109	1833	281
Peak Hour Factor	0.7970	0.7970	0.7970	0.6700	0.6700	0.6700	0.9700	0.9700	0.9700	0.9160	0.9160	0.9160
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	15	28	73	40	81	36	423	10	30	500	77
Total Analysis Volume [veh/h]	45	61	110	293	161	324	143	1691	39	119	2001	307
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	43	0	0	43	0	13	35	0	12	34	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	23	0	0	17	0	0	23	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	18	18	18	18	18	9	52	52	8	51	51
g / C, Green / Cycle	0.20	0.20	0.20	0.20	0.20	0.20	0.10	0.58	0.58	0.08	0.56	0.56
(v / s)_i Volume / Saturation Flow Rate	0.03	0.03	0.06	0.16	0.04	0.17	0.08	0.30	0.31	0.07	0.35	0.16
s, saturation flow rate [veh/h]	1800	1900	1900	1800	3800	1900	1800	3800	1900	1800	5700	1900
c, Capacity [veh/h]	351	390	390	367	779	390	178	2194	1097	152	3209	1070
d1, Uniform Delay [s]	29.20	29.41	30.22	34.00	29.73	34.32	39.74	11.49	11.68	40.44	13.26	10.26
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.16	0.19	0.39	4.02	0.13	4.65	8.22	0.88	1.90	8.53	0.92	0.68
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.13	0.16	0.28	0.80	0.21	0.83	0.80	0.52	0.54	0.78	0.62	0.29
d, Delay for Lane Group [s/veh]	29.36	29.60	30.61	38.03	29.86	38.97	47.96	12.37	13.59	48.97	14.18	10.94
Lane Group LOS	C	C	C	D	C	D	D	B	B	D	B	B
Critical Lane Group	No	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.80	1.09	2.03	6.36	1.44	7.15	3.46	6.49	7.16	2.91	8.52	3.14
50th-Percentile Queue Length [ft/ln]	20.02	27.30	50.71	159.07	36.10	178.67	86.56	162.31	178.98	72.83	212.97	78.45
95th-Percentile Queue Length [veh/ln]	1.44	1.97	3.65	10.50	2.60	11.53	6.23	10.67	11.55	5.24	13.31	5.65
95th-Percentile Queue Length [ft/ln]	36.04	49.14	91.28	262.49	64.97	288.28	155.81	266.78	288.68	131.09	332.64	141.21

Movement, Approach, & Intersection Results

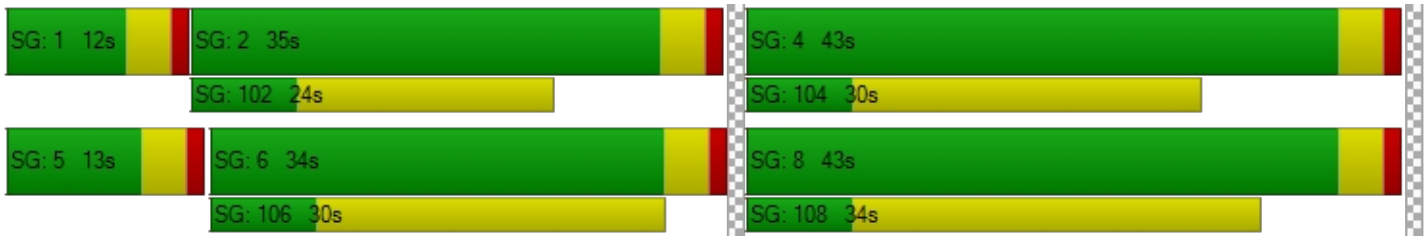
d_M, Delay for Movement [s/veh]	29.36	29.60	30.61	38.03	29.86	38.97	47.96	12.77	13.59	48.97	14.18	10.94
Movement LOS	C	C	C	D	C	D	D	B	B	D	B	B
d_A, Approach Delay [s/veh]	30.06			36.73			15.47			15.48		
Approach LOS	C			D			B			B		
d_I, Intersection Delay [s/veh]	19.19											
Intersection LOS	B											
Intersection V/C	0.693											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.70	34.70	34.70	34.70
l_p,int, Pedestrian LOS Score for Intersection	2.404	2.551	3.248	3.693
Crosswalk LOS	B	B	C	D
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	866	866	689	666
d_b, Bicycle Delay [s]	14.47	14.47	19.36	20.02
l_b,int, Bicycle LOS Score for Intersection	1.916	2.201	2.590	2.894
Bicycle LOS	A	B	B	C

Sequence

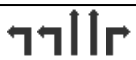
Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: Brea Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	42.0
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.888

Intersection Setup

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	536	890	297	264	696	217	242	1874	433	260	1862	197
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	536	890	297	264	696	217	242	1874	433	260	1862	197
Peak Hour Factor	0.9630	0.9630	0.9630	0.9380	0.9380	0.9380	0.9710	0.9710	0.9710	0.9670	0.9670	0.9670
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	139	231	77	70	186	58	62	482	111	67	481	51
Total Analysis Volume [veh/h]	557	924	308	281	742	231	249	1930	446	269	1926	204
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	23	46	0	16	39	0	13	44	0	14	45	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	30	0	0	28	0	0	30	0	0	30	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	19	34	34	12	27	27	9	48	48	10	49	49
g / C, Green / Cycle	0.16	0.29	0.29	0.10	0.22	0.22	0.08	0.40	0.40	0.08	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.16	0.16	0.16	0.08	0.20	0.12	0.07	0.34	0.23	0.08	0.34	0.11
s, saturation flow rate [veh/h]	3500	5700	1900	3500	3800	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	556	1626	542	340	849	424	267	2280	760	296	2327	776
d1, Uniform Delay [s]	50.52	36.62	36.62	53.25	45.02	41.24	55.17	32.69	28.26	54.53	31.77	23.56
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	18.12	0.31	0.94	5.15	3.02	1.09	13.83	4.11	3.31	10.46	3.55	0.83
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.00	0.57	0.57	0.83	0.87	0.54	0.93	0.85	0.59	0.91	0.83	0.26
d, Delay for Lane Group [s/veh]	68.64	36.93	37.56	58.40	48.03	42.33	69.01	36.80	31.56	64.99	35.32	24.39
Lane Group LOS	F	D	D	E	D	D	E	D	C	E	D	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	9.72	7.75	7.84	4.41	10.97	6.18	4.26	17.50	10.66	4.46	17.07	4.02
50th-Percentile Queue Length [ft/ln]	243.06	193.70	196.06	110.14	274.23	154.55	106.46	437.39	266.52	111.52	426.83	100.54
95th-Percentile Queue Length [veh/ln]	14.85	12.31	12.44	7.85	16.40	10.26	7.64	24.36	16.02	7.92	23.85	7.24
95th-Percentile Queue Length [ft/ln]	371.20	307.83	310.88	196.19	410.02	256.50	191.07	608.88	400.39	198.12	596.24	180.97

Movement, Approach, & Intersection Results

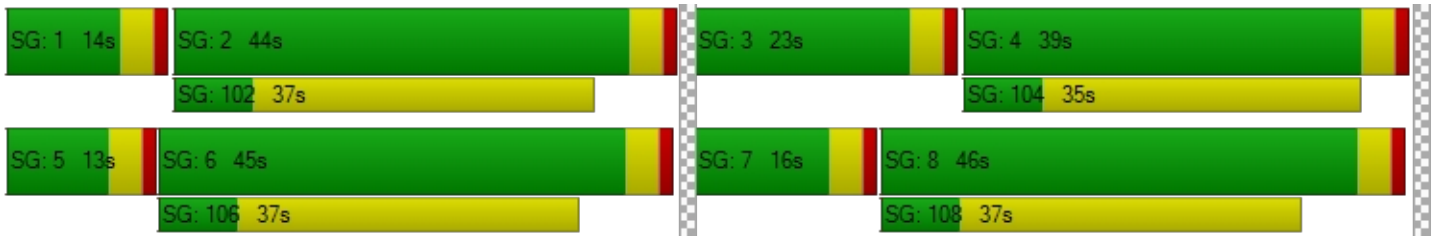
d_M, Delay for Movement [s/veh]	68.64	36.93	37.56	58.40	48.03	42.33	69.01	36.80	31.56	64.99	35.32	24.39
Movement LOS	F	D	D	E	D	D	E	D	C	E	D	C
d_A, Approach Delay [s/veh]	46.92			49.31			38.97			37.72		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	41.96											
Intersection LOS	D											
Intersection V/C	0.888											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.54	49.54	49.54	49.54
l_p,int, Pedestrian LOS Score for Intersection	3.135	3.060	3.441	3.396
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	700	583	666	683
d_b, Bicycle Delay [s]	25.38	30.13	26.69	26.03
l_b,int, Bicycle LOS Score for Intersection	2.544	2.594	3.003	2.879
Bicycle LOS	B	B	C	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 13: Randolph Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	28.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.793

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	58	39	69	352	30	239	320	1807	45	73	2051	368
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	58	39	69	352	30	239	320	1807	45	73	2051	368
Peak Hour Factor	0.8890	0.8890	0.8890	0.8820	0.8820	0.8820	0.9540	0.9540	0.9540	0.9450	0.9450	0.9450
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	11	19	100	9	68	84	474	12	19	543	97
Total Analysis Volume [veh/h]	65	44	78	399	34	271	335	1894	47	77	2170	389
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	10	0	0	42	0	18	48	0	10	40	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	29	0	0	28	0	0	29	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	7	7	21	21	13	60	60	6	54	54
g / C, Green / Cycle	0.06	0.06	0.06	0.19	0.19	0.11	0.55	0.55	0.05	0.49	0.49
(v / s)_i Volume / Saturation Flow Rate	0.03	0.03	0.04	0.11	0.16	0.10	0.34	0.35	0.04	0.38	0.20
s, saturation flow rate [veh/h]	1800	1800	1900	3500	1900	3500	3800	1900	1800	5700	1900
c, Capacity [veh/h]	112	112	118	670	364	400	2073	1037	100	2773	924
d1, Uniform Delay [s]	49.91	49.93	50.48	40.61	42.86	47.75	17.12	17.49	51.32	23.43	18.25
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.20	3.28	6.12	0.85	5.17	4.69	1.38	3.05	11.90	2.28	1.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.48	0.49	0.66	0.60	0.84	0.84	0.62	0.64	0.77	0.78	0.42
d, Delay for Lane Group [s/veh]	53.11	53.22	56.60	41.46	48.03	52.44	18.50	20.53	63.22	25.72	19.66
Lane Group LOS	D	D	E	D	D	D	B	C	E	C	B
Critical Lane Group	No	No	Yes	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.54	1.56	2.30	5.00	8.46	4.74	10.95	12.10	2.42	15.52	6.61
50th-Percentile Queue Length [ft/ln]	38.47	39.05	57.48	124.92	211.43	118.58	273.65	302.47	60.53	387.93	165.36
95th-Percentile Queue Length [veh/ln]	2.77	2.81	4.14	8.66	13.23	8.31	16.37	17.80	4.36	21.98	10.83
95th-Percentile Queue Length [ft/ln]	69.25	70.30	103.47	216.56	330.66	207.87	409.29	445.08	108.96	549.43	270.81

Movement, Approach, & Intersection Results

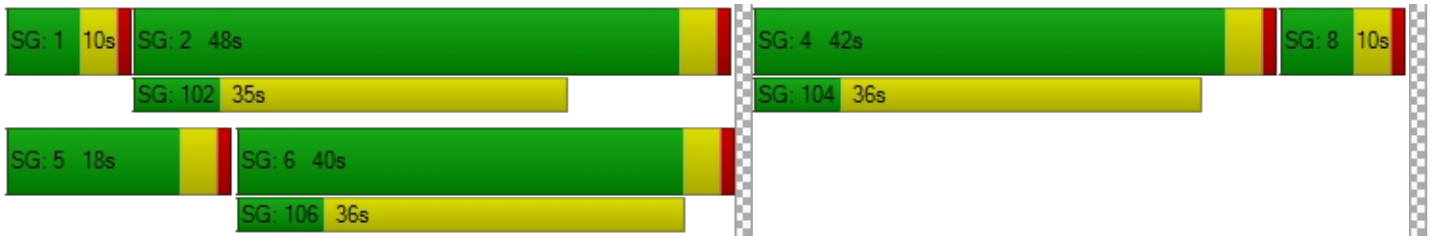
d_M, Delay for Movement [s/veh]	53.13	53.22	56.60	41.46	48.03	48.03	52.44	19.16	20.53	63.22	25.72	19.66
Movement LOS	D	D	E	D	D	D	D	B	C	E	C	B
d_A, Approach Delay [s/veh]	54.60			44.31			24.09			25.92		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	28.36											
Intersection LOS	C											
Intersection V/C	0.793											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	44.58	44.58	44.58	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.225	2.596	3.318	0.000
Crosswalk LOS	B	B	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	109	691	800	654
d_b, Bicycle Delay [s]	49.19	23.59	19.82	24.91
l_b,int, Bicycle LOS Score for Intersection	1.714	2.721	2.811	3.009
Bicycle LOS	A	B	C	C

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 14: State College Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	67.4
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.061

Intersection Setup

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	391	625	370	463	323	98	112	1991	116	474	2019	574
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	391	625	370	463	323	98	112	1991	116	474	2019	574
Peak Hour Factor	0.8990	0.8990	0.8990	0.8970	0.8970	0.8970	0.9570	0.9570	0.9570	0.9550	0.9550	0.9550
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	109	174	103	129	90	27	29	520	30	124	529	150
Total Analysis Volume [veh/h]	435	695	412	516	360	109	117	2080	121	496	2114	601
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	20	41	0	28	49	0	12	34	0	17	39	39
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	30	0	0	28	0	0	23	0	0	23	23
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	16	30	30	24	38	38	6	37	37	13	45	73
g / C, Green / Cycle	0.13	0.25	0.25	0.20	0.31	0.31	0.05	0.31	0.31	0.11	0.37	0.60
(v / s)_i Volume / Saturation Flow Rate	0.12	0.18	0.22	0.26	0.13	0.12	0.03	0.29	0.30	0.14	0.37	0.32
s, saturation flow rate [veh/h]	3500	3800	1900	2000	1900	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	469	936	468	400	594	594	177	1772	591	383	2107	1146
d1, Uniform Delay [s]	51.42	41.75	43.56	48.04	32.58	32.21	56.02	39.89	40.92	53.50	37.86	13.83
k, delay calibration	0.11	0.11	0.24	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.36	1.19	11.26	134.17	0.46	0.40	4.18	9.02	31.36	137.62	20.34	1.72
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.93	0.74	0.88	1.29	0.41	0.38	0.66	0.92	0.97	1.30	1.00	0.52
d, Delay for Lane Group [s/veh]	59.79	42.93	54.82	182.21	33.04	32.61	60.20	48.92	72.28	191.12	58.20	15.55
Lane Group LOS	E	D	D	F	C	C	E	D	E	F	F	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	7.00	9.62	13.17	13.42	5.69	5.18	1.85	16.69	21.74	13.08	24.15	9.62
50th-Percentile Queue Length [ft/ln]	175.11	240.48	329.31	335.40	142.23	129.45	46.16	417.25	543.43	326.96	603.69	240.45
95th-Percentile Queue Length [veh/ln]	11.34	14.71	19.12	21.76	9.60	8.91	3.32	23.39	29.38	20.91	32.28	14.70
95th-Percentile Queue Length [ft/ln]	283.62	367.64	478.12	544.04	240.03	222.75	83.08	584.75	734.59	522.74	806.97	367.60

Movement, Approach, & Intersection Results

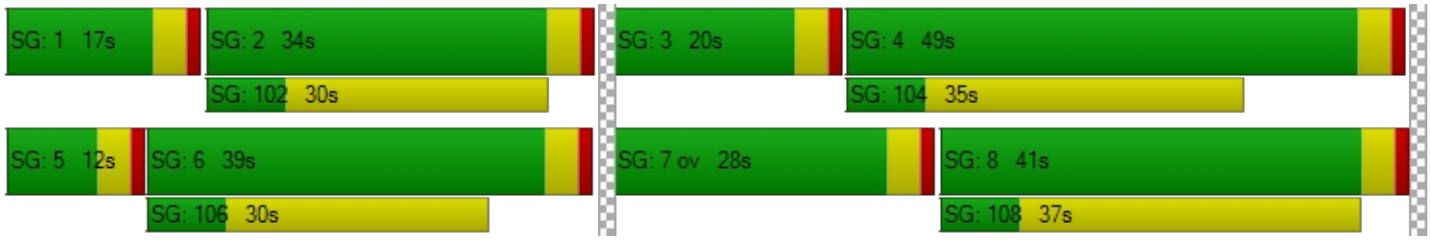
d_M, Delay for Movement [s/veh]	59.79	42.93	54.82	182.21	32.90	32.61	60.20	54.03	72.28	191.12	58.20	15.55
Movement LOS	E	D	D	F	C	C	E	D	E	F	F	B
d_A, Approach Delay [s/veh]	50.86			111.08			55.29			70.75		
Approach LOS	D			F			E			E		
d_I, Intersection Delay [s/veh]	67.43											
Intersection LOS	E											
Intersection V/C	1.061											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.54	49.54	49.54	49.54
l_p,int, Pedestrian LOS Score for Intersection	2.959	2.856	3.402	3.587
Crosswalk LOS	C	C	C	D
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	616	750	500	583
d_b, Bicycle Delay [s]	28.73	23.46	33.78	30.13
l_b,int, Bicycle LOS Score for Intersection	2.832	2.372	2.516	3.326
Bicycle LOS	C	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 15: SR-57 SB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	17.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.773

Intersection Setup

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	0	0	0	687	0	571	0	1800	1043	0	2492	417
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	687	0	571	0	1800	1043	0	2492	417
Peak Hour Factor	1.0000	1.0000	1.0000	0.9390	1.0000	0.9390	1.0000	0.9540	0.9540	1.0000	0.9730	0.9730
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	183	0	152	0	472	273	0	640	107
Total Analysis Volume [veh/h]	0	0	0	732	0	608	0	1887	1093	0	2561	429
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	7	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	6	0	0	0	6	0	0	6	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	64	0	0	0	26	0	0	26	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	15	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	C
C, Cycle Length [s]		90	90	90	90	90
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		27	27	27	54	54
g / C, Green / Cycle		0.31	0.31	0.31	0.61	0.61
(v / s)_i Volume / Saturation Flow Rate		0.26	0.26	0.24	0.33	0.45
s, saturation flow rate [veh/h]		1750	1750	1900	5700	5700
c, Capacity [veh/h]		533	533	579	3456	3456
d1, Uniform Delay [s]		29.16	29.16	28.39	10.41	12.64
k, delay calibration		0.11	0.11	0.11	0.50	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		3.59	3.59	2.22	0.62	1.47
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.84	0.84	0.77	0.55	0.74
d, Delay for Lane Group [s/veh]		32.76	32.76	30.62	11.03	14.11
Lane Group LOS		C	C	C	B	B
Critical Lane Group		Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]		9.21	9.21	8.81	6.75	11.26
50th-Percentile Queue Length [ft/ln]		230.25	230.25	220.17	168.63	281.53
95th-Percentile Queue Length [veh/ln]		14.19	14.19	13.67	11.00	16.76
95th-Percentile Queue Length [ft/ln]		354.68	354.68	341.84	275.11	419.12

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	32.76	0.00	31.19	0.00	11.03	0.00	0.00	14.11	0.00
Movement LOS				C		C		B			B	
d_A, Approach Delay [s/veh]	0.00			32.04			11.03			14.11		
Approach LOS	A			C			B			B		
d_I, Intersection Delay [s/veh]	17.26											
Intersection LOS	B											
Intersection V/C	0.773											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	34.63	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	2.457	0.000	0.000
Crosswalk LOS	F	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1335	489	489
d_b, Bicycle Delay [s]	44.96	4.98	25.65	25.65
l_b,int, Bicycle LOS Score for Intersection	4.132	3.771	2.597	2.968
Bicycle LOS	D	D	B	C

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 16: SR-57 NB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	23.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.799

Intersection Setup

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	1052	64	453	0	0	193	183	1936	385	0	2546	38
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1052	64	453	0	0	193	183	1936	385	0	2546	38
Peak Hour Factor	0.9490	0.9490	0.9490	1.0000	1.0000	0.8840	0.9510	0.9510	0.9510	1.0000	0.9830	0.9830
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	277	17	119	0	0	55	48	509	101	0	648	10
Total Analysis Volume [veh/h]	1109	67	477	0	0	218	192	2036	405	0	2590	39
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Overlap	Protecte	Permiss	Unsigna	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	0	5	5	2	0	0	6	0
Auxiliary Signal Groups						5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	6	0	0	0	6	6	6	0	0	6	0
Maximum Green [s]	0	30	0	0	0	30	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	1.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	39	0	0	0	21	21	51	0	0	30	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	22	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No				No		No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No				No	No	No			No	
Maximum Recall		No				No	No	No			No	
Pedestrian Recall		No				No	No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	R	L	C	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	27	27	27	12	12	55	40	40
g / C, Green / Cycle	0.30	0.30	0.30	0.13	0.13	0.62	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.23	0.24	0.22	0.06	0.11	0.36	0.35	0.35
s, saturation flow rate [veh/h]	3500	1750	1900	3800	1800	5700	5700	1900
c, Capacity [veh/h]	1034	517	562	501	237	3509	2505	835
d1, Uniform Delay [s]	29.12	29.38	28.67	36.01	38.00	10.35	21.63	21.63
k, delay calibration	0.11	0.17	0.14	0.11	0.11	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.37	4.88	2.54	0.60	6.49	0.71	2.59	7.40
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.81	0.75	0.44	0.81	0.58	0.79	0.79
d, Delay for Lane Group [s/veh]	30.49	34.27	31.21	36.61	44.49	11.06	24.22	29.03
Lane Group LOS	C	C	C	D	D	B	C	C
Critical Lane Group	No	Yes	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	8.02	8.83	8.32	2.22	4.48	7.33	11.78	12.89
50th-Percentile Queue Length [ft/ln]	200.40	220.70	208.11	55.49	111.89	183.24	294.42	322.33
95th-Percentile Queue Length [veh/ln]	12.66	13.70	13.06	4.00	7.95	11.77	17.40	18.78
95th-Percentile Queue Length [ft/ln]	316.48	342.52	326.40	99.88	198.63	294.24	435.12	469.54

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	31.47	34.27	31.62	0.00	0.00	36.61	44.49	11.06	0.00	0.00	25.36	29.03
Movement LOS	C	C	C			D	D	B			C	C
d_A, Approach Delay [s/veh]	31.63			36.61			13.94			25.42		
Approach LOS	C			D			B			C		
d_I, Intersection Delay [s/veh]	23.50											
Intersection LOS	C											
Intersection V/C	0.799											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.622	2.107	0.000	0.000
Crosswalk LOS	B	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	778	378	1044	578
d_b, Bicycle Delay [s]	16.82	29.62	10.28	22.77
l_b,int, Bicycle LOS Score for Intersection	4.287	1.560	2.785	2.644
Bicycle LOS	E	A	C	B

Sequence

Ring 1	-	2	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 17: Associated Road at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	46.3
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.918

Intersection Setup

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	225	262	86	297	353	264	280	1944	146	178	1846	191
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	225	262	86	297	353	264	280	1944	146	178	1846	191
Peak Hour Factor	0.9100	0.9100	0.9100	0.8290	0.8290	0.8290	0.9480	0.9480	0.9480	0.9350	0.9350	0.9350
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	62	72	24	90	106	80	74	513	39	48	494	51
Total Analysis Volume [veh/h]	247	288	95	358	426	318	295	2051	154	190	1974	204
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	13	39	0	18	44	0	26	45	0	18	37	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	28	0	0	29	0	0	26	0	0	25	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	25	25	14	30	30	21	51	51	14	44	44
g / C, Green / Cycle	0.08	0.21	0.21	0.12	0.25	0.25	0.18	0.43	0.43	0.12	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.07	0.10	0.10	0.10	0.22	0.17	0.16	0.38	0.40	0.11	0.28	0.29
s, saturation flow rate [veh/h]	3500	1900	1900	3500	1900	1900	1800	3800	1900	1800	5700	1900
c, Capacity [veh/h]	267	393	393	412	471	471	322	1615	807	212	2073	691
d1, Uniform Delay [s]	55.14	42.22	41.86	52.10	43.79	40.80	48.43	32.17	32.83	52.29	33.96	34.48
k, delay calibration	0.11	0.11	0.11	0.11	0.22	0.11	0.20	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	12.98	1.01	0.87	5.75	12.47	1.70	16.75	8.49	18.55	12.65	3.00	9.96
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.93	0.51	0.47	0.87	0.90	0.68	0.92	0.90	0.93	0.90	0.78	0.81
d, Delay for Lane Group [s/veh]	68.12	43.23	42.73	57.85	56.26	42.49	65.18	40.66	51.37	64.93	36.96	44.44
Lane Group LOS	E	D	D	E	E	D	E	D	D	E	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.19	5.35	4.90	5.62	13.82	8.70	10.15	21.06	24.33	6.39	14.37	16.44
50th-Percentile Queue Length [ft/ln]	104.86	133.66	122.58	140.62	345.48	217.46	253.66	526.58	608.34	159.64	359.22	411.04
95th-Percentile Queue Length [veh/ln]	7.55	9.14	8.53	9.51	19.92	13.54	15.37	28.59	32.42	10.53	20.59	23.09
95th-Percentile Queue Length [ft/ln]	188.75	228.47	213.37	237.86	497.89	338.38	384.26	714.75	810.59	263.25	514.64	577.29

Movement, Approach, & Intersection Results

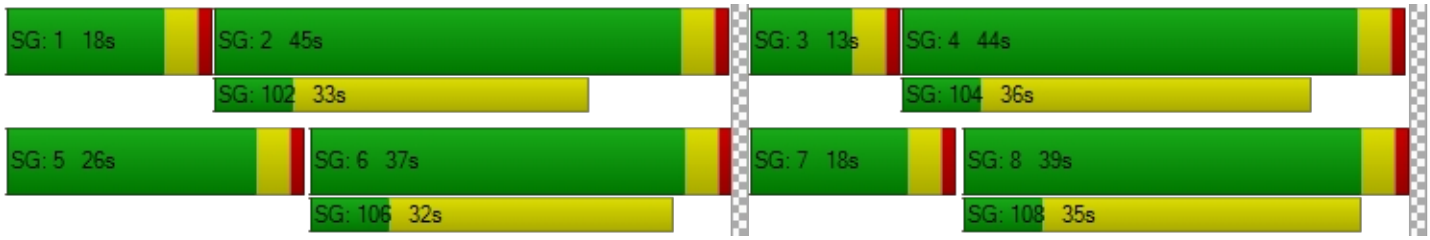
d_M, Delay for Movement [s/veh]	68.12	43.08	42.73	57.85	56.26	42.49	65.18	43.78	51.37	64.93	38.31	44.44
Movement LOS	E	D	D	E	E	D	E	D	D	E	D	D
d_A, Approach Delay [s/veh]	52.85			52.80			46.77			40.98		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	46.28											
Intersection LOS	D											
Intersection V/C	0.918											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.54	49.54	49.54	49.54
l_p,int, Pedestrian LOS Score for Intersection	2.587	2.774	3.353	3.333
Crosswalk LOS	B	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	583	666	683	550
d_b, Bicycle Delay [s]	30.13	26.69	26.03	31.57
l_b,int, Bicycle LOS Score for Intersection	2.079	3.378	2.935	2.536
Bicycle LOS	B	C	C	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 18: Castlegate Lane/Placentia Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	26.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.837

Intersection Setup

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	263	48	272	26	23	15	19	1951	291	237	2015	58
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	263	48	272	26	23	15	19	1951	291	237	2015	58
Peak Hour Factor	0.8580	0.8580	0.8580	0.6480	0.6480	0.6480	0.9520	0.9520	0.9520	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	77	14	79	10	9	6	5	512	76	63	533	15
Total Analysis Volume [veh/h]	307	56	317	40	35	23	20	2049	306	251	2130	61
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	27	0	0	10	0	10	32	0	26	48	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	15	0	0	0	0	0	21	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	C
C, Cycle Length [s]	95	95	95	95	95	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	18	18	6	6	3	40	40	15	53	53
g / C, Green / Cycle	0.19	0.19	0.19	0.06	0.06	0.03	0.42	0.42	0.16	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.10	0.10	0.17	0.02	0.03	0.01	0.36	0.16	0.14	0.38	0.40
s, saturation flow rate [veh/h]	1750	1750	1900	1800	1900	1800	5700	1900	1800	3800	1900
c, Capacity [veh/h]	338	338	367	107	113	49	2380	793	291	2097	1049
d1, Uniform Delay [s]	34.52	34.57	37.16	43.05	43.42	45.53	25.20	19.24	38.87	15.39	15.79
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.31	1.34	6.08	2.15	3.58	5.37	4.37	1.42	7.53	1.86	4.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.53	0.54	0.86	0.37	0.51	0.41	0.86	0.39	0.86	0.69	0.72
d, Delay for Lane Group [s/veh]	35.83	35.91	43.24	45.20	46.99	50.90	29.57	20.65	46.40	17.24	19.98
Lane Group LOS	D	D	D	D	D	D	C	C	D	B	B
Critical Lane Group	No	No	Yes	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.82	3.88	7.62	0.96	1.43	0.53	14.28	4.87	6.23	10.91	12.31
50th-Percentile Queue Length [ft/ln]	95.61	96.99	190.60	24.07	35.67	13.37	357.01	121.69	155.74	272.68	307.74
95th-Percentile Queue Length [veh/ln]	6.88	6.98	12.15	1.73	2.57	0.96	20.48	8.49	10.32	16.32	18.06
95th-Percentile Queue Length [ft/ln]	172.10	174.58	303.80	43.33	64.20	24.06	511.94	212.14	258.07	408.09	451.59

Movement, Approach, & Intersection Results

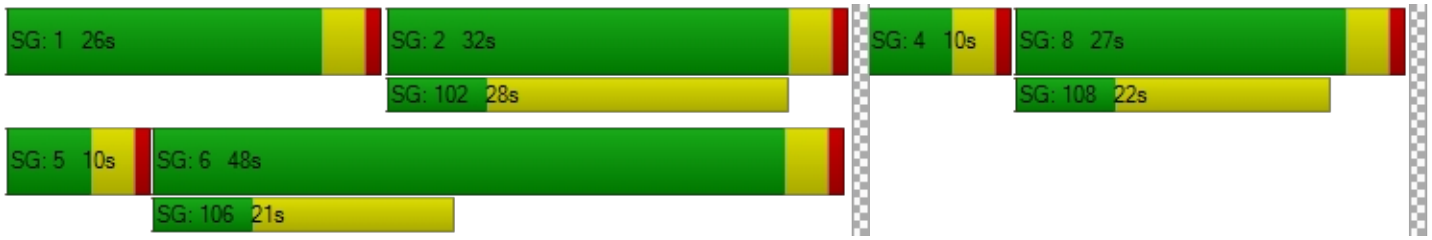
d_M, Delay for Movement [s/veh]	35.86	35.91	43.24	45.20	46.99	46.99	50.90	29.57	20.65	46.40	18.13	19.98
Movement LOS	D	D	D	D	D	D	D	C	C	D	B	B
d_A, Approach Delay [s/veh]	39.31			46.26			28.60			21.08		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	26.93											
Intersection LOS	C											
Intersection V/C	0.837											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	37.18	37.18	0.00	37.18
l_p,int, Pedestrian LOS Score for Intersection	2.443	2.019	0.000	3.271
Crosswalk LOS	B	B	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	484	126	589	926
d_b, Bicycle Delay [s]	27.32	41.73	23.66	13.72
l_b,int, Bicycle LOS Score for Intersection	2.682	1.721	2.866	2.903
Bicycle LOS	B	A	C	C

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Brea Mall Expansion, Brea

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Scenario 9 Sat MD 2026+P
4/12/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State College Boulevard at Lambert Road	Signalized	HCM 6th Edition	WB Left	0.903	45.1	D
2	SR-57 SB Ramps at Lambert Road	Signalized	HCM 6th Edition	WB Left	0.790	29.1	C
3	SR-57 NB Ramps at Lambert Road	Signalized	HCM 6th Edition	NB Left	0.774	19.2	B
4	Randolph Avenue at Birch Street	Signalized	HCM 6th Edition	EB Left	0.516	20.0	B
5	State College Boulevard at Birch Street	Signalized	HCM 6th Edition	NB Left	0.797	41.3	D
6	S Associated Road at Birch Street	Signalized	HCM 6th Edition	EB Left	0.610	21.2	C
7	Randolph Avenue at Madison Way	Signalized	HCM 6th Edition	WB Left	0.263	20.4	C
8	Randolph Avenue at Brea Mall	Signalized	HCM 6th Edition	EB Left	0.554	26.0	C
9	Brea Mall South at State College Boulevard	Signalized	HCM 6th Edition	WB Left	0.881	33.6	C
10	Harbor Boulevard at Imperial Highway	Signalized	HCM 6th Edition	SB Left	0.759	39.9	D
11	Puente Street at Imperial Highway	Signalized	HCM 6th Edition	EB Left	0.518	14.2	B
12	Brea Boulevard at Imperial Highway	Signalized	HCM 6th Edition	SB Left	0.930	49.6	D
13	Randolph Avenue at Imperial Highway	Signalized	HCM 6th Edition	WB Left	0.950	52.9	D
14	State College Boulevard at Imperial Highway	Signalized	HCM 6th Edition	SB Left	1.394	165.2	F
15	SR-57 SB Ramps at Imperial Highway	Signalized	HCM 6th Edition	SB Left	0.856	21.1	C
16	SR-57 NB Ramps at Imperial Highway	Signalized	HCM 6th Edition	EB Left	0.859	34.0	C
17	Associated Road at Imperial Highway	Signalized	HCM 6th Edition	WB Left	0.855	37.3	D
18	Castlegate Lane/Placentia	Signalized	HCM 6th	EB Left	0.816	23.6	C

16	Avenue at Imperial Highway	Signalized	Edition	EB Left	0.616	23.6	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: State College Boulevard at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	45.1
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.903

Intersection Setup

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	139	280	398	547	389	5	19	1230	276	747	1631	751
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	139	280	398	547	389	5	19	1230	276	747	1631	751
Peak Hour Factor	0.9010	0.9010	0.9010	0.8760	0.8760	0.8760	0.8390	0.8390	0.8390	0.9650	0.9650	0.9650
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	78	110	156	111	1	6	367	82	194	423	195
Total Analysis Volume [veh/h]	154	311	442	624	444	6	23	1466	329	774	1690	778
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	10	27	0	27	44	0	10	39	0	27	56	56
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	0	0	0	33	0	0	28	0	0	22	22
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	6	20	20	20	23	37	37	3	38	38	23	58	85
g / C, Green / Cycle	0.05	0.17	0.17	0.17	0.19	0.31	0.31	0.03	0.32	0.32	0.19	0.48	0.71
(v / s)_i Volume / Saturation Flow Rate	0.04	0.15	0.13	0.12	0.18	0.12	0.12	0.01	0.24	0.23	0.22	0.30	0.41
s, saturation flow rate [veh/h]	3500	1900	1900	1900	3500	1900	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	178	317	317	317	671	585	585	97	1804	601	671	2739	1341
d1, Uniform Delay [s]	56.58	48.80	47.73	47.59	47.72	32.65	32.63	57.13	36.80	36.49	48.52	23.02	8.81
k, delay calibration	0.11	0.14	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.90	9.76	3.75	3.46	6.37	0.42	0.41	1.24	2.94	7.66	72.98	1.05	1.84
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.87	0.87	0.76	0.74	0.93	0.39	0.38	0.24	0.75	0.73	1.15	0.62	0.58
d, Delay for Lane Group [s/veh]	68.48	58.56	51.49	51.05	54.09	33.06	33.04	58.37	39.73	44.15	121.50	24.07	10.64
Lane Group LOS	E	E	D	D	D	C	C	E	D	D	F	C	B
Critical Lane Group	No	Yes	No	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.61	8.93	7.19	7.00	9.73	5.23	5.21	0.36	12.29	12.67	16.80	11.81	9.79
50th-Percentile Queue Length [ft/ln]	65.29	223.2	179.7	174.9	243.28	130.85	130.16	8.97	307.14	316.64	419.95	295.27	244.79
95th-Percentile Queue Length [veh/ln]	4.70	13.83	11.59	11.34	14.85	8.99	8.95	0.65	18.03	18.50	25.25	17.45	14.92
95th-Percentile Queue Length [ft/ln]	117.5	345.7	289.7	283.4	371.17	224.66	223.71	16.15	450.85	462.56	631.36	436.17	373.09

Movement, Approach, & Intersection Results

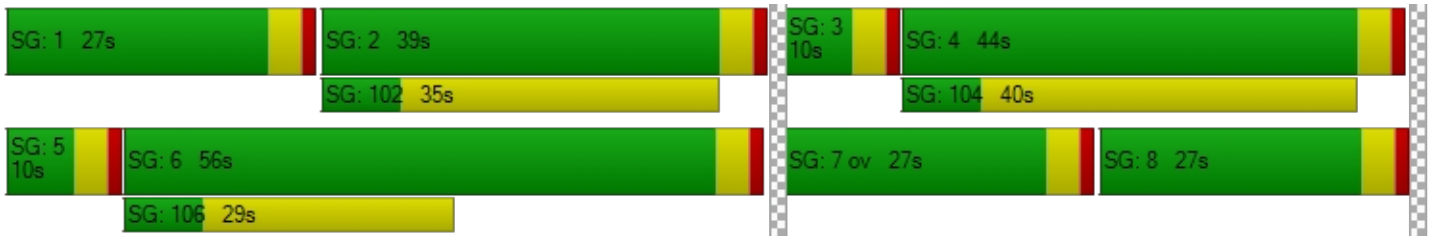
d_M, Delay for Movement [s/veh]	68.48	57.78	51.24	54.09	33.05	33.04	58.37	40.07	44.15	121.50	24.07	10.64
Movement LOS	E	E	D	D	C	C	E	D	D	F	C	B
d_A, Approach Delay [s/veh]	56.42			45.27			41.04			44.11		
Approach LOS	E			D			D			D		
d_I, Intersection Delay [s/veh]	45.08											
Intersection LOS	D											
Intersection V/C	0.903											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.52	49.52	49.52	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.950	2.822	3.260	0.000
Crosswalk LOS	C	C	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	383	666	583	866
d_b, Bicycle Delay [s]	39.22	26.68	30.12	19.28
l_b,int, Bicycle LOS Score for Intersection	2.308	2.446	2.310	3.343
Bicycle LOS	B	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



Intersection Level Of Service Report
Intersection 2: SR-57 SB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	29.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.790

Intersection Setup

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	0	0	0	837	0	1249	0	1580	580	199	1877	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	837	0	1249	0	1580	580	199	1877	0
Peak Hour Factor	1.0000	1.0000	1.0000	0.9460	1.0000	0.9460	1.0000	0.9230	0.9230	0.9510	0.9510	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	221	0	330	0	428	157	52	493	0
Total Analysis Volume [veh/h]	0	0	0	885	0	1320	0	1712	628	209	1974	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	7	0	0	0	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	6	0	0	0	6	0	6	6	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	79	0	0	0	23	0	13	36	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	12	0	0	20	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall				No				No		No	No	
Maximum Recall				No				No		No	No	
Pedestrian Recall				No				No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	R	C	R	L	C
C, Cycle Length [s]		115	115	115	115	115	115
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		50	50	44	44	9	57
g / C, Green / Cycle		0.44	0.44	0.38	0.38	0.08	0.49
(v / s)_i Volume / Saturation Flow Rate		0.25	0.35	0.30	0.17	0.06	0.35
s, saturation flow rate [veh/h]		3500	3800	5700	3800	3500	5700
c, Capacity [veh/h]		1535	1667	2169	1446	268	2803
d1, Uniform Delay [s]		24.25	27.76	31.52	26.42	52.14	22.71
k, delay calibration		0.11	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.34	0.88	3.01	0.95	4.94	1.51
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.58	0.79	0.79	0.43	0.78	0.70
d, Delay for Lane Group [s/veh]		24.59	28.64	34.53	27.37	57.07	24.22
Lane Group LOS		C	C	C	C	E	C
Critical Lane Group		No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]		8.98	15.42	14.39	6.55	3.14	13.83
50th-Percentile Queue Length [ft/ln]		224.55	385.38	359.65	163.67	78.54	345.75
95th-Percentile Queue Length [veh/ln]		13.90	21.85	20.61	10.74	5.66	19.93
95th-Percentile Queue Length [ft/ln]		347.42	546.35	515.16	268.58	141.38	498.23

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	24.59	0.00	28.64	0.00	34.53	27.37	57.07	24.22	0.00
Movement LOS				C		C		C	C	E	C	
d_A, Approach Delay [s/veh]	0.00			27.01			32.61			27.36		
Approach LOS	A			C			C			C		
d_I, Intersection Delay [s/veh]	29.07											
Intersection LOS	C											
Intersection V/C	0.790											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	47.01	47.01	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.135	2.680	0.000	0.000
Crosswalk LOS	B	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1305	331	557
d_b, Bicycle Delay [s]	57.49	6.95	40.06	29.94
l_b,int, Bicycle LOS Score for Intersection	4.132	1.560	2.847	2.760
Bicycle LOS	D	A	C	C

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 3: SR-57 NB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	19.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.774

Intersection Setup

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			No			No			No		

Volumes

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	1104	0	467	0	0	0	0	1699	722	0	971	425
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1104	0	467	0	0	0	0	1699	722	0	971	425
Peak Hour Factor	0.9860	1.0000	0.9860	1.0000	1.0000	1.0000	0.9710	0.9080	0.9080	1.0000	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	280	0	118	0	0	0	0	468	199	0	258	0
Total Analysis Volume [veh/h]	1120	0	474	0	0	0	0	1871	795	0	1033	0
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Permiss	Split	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna
Signal Group	3	0	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	0	0	0	0	0	0	6	0	0	6	0
Maximum Green [s]	30	0	0	0	0	0	0	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	54	0	0	0	0	0	0	36	0	0	36	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	25	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R		C	C	R	C
C, Cycle Length [s]	90	90		90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	34	34		48	48	48	48
g / C, Green / Cycle	0.38	0.38		0.53	0.53	0.53	0.53
(v / s)_i Volume / Saturation Flow Rate	0.32	0.25		0.35	0.35	0.35	0.18
s, saturation flow rate [veh/h]	3500	1900		3800	1900	1900	5700
c, Capacity [veh/h]	1319	716		2030	1015	1015	3045
d1, Uniform Delay [s]	25.65	23.24		15.02	15.02	15.02	11.91
k, delay calibration	0.11	0.11		0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.62	1.06		1.68	3.32	3.32	0.30
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.66		0.66	0.66	0.66	0.34
d, Delay for Lane Group [s/veh]	27.27	24.30		16.69	18.34	18.34	12.21
Lane Group LOS	C	C		B	B	B	B
Critical Lane Group	Yes	No		Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	10.73	8.21		9.47	9.93	9.93	3.77
50th-Percentile Queue Length [ft/ln]	268.20	205.24		236.76	248.34	248.34	94.28
95th-Percentile Queue Length [veh/ln]	16.10	12.91		14.52	15.10	15.10	6.79
95th-Percentile Queue Length [ft/ln]	402.49	322.71		362.93	377.57	377.57	169.70

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	27.27	0.00	24.30	0.00	0.00	0.00	0.00	16.78	18.34	0.00	12.21	0.00
Movement LOS	C		C					B	B		B	
d_A, Approach Delay [s/veh]	26.39			0.00			17.52			12.21		
Approach LOS	C			A			B			B		
d_I, Intersection Delay [s/veh]	19.15											
Intersection LOS	B											
Intersection V/C	0.774											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.63	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.765	0.000	0.000	0.000
Crosswalk LOS	C	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1112	0	712	712
d_b, Bicycle Delay [s]	8.86	44.96	18.65	18.65
l_b,int, Bicycle LOS Score for Intersection	1.560	4.132	3.026	2.128
Bicycle LOS	A	D	C	B

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 4: Randolph Avenue at Birch Street

Control Type:	Signalized	Delay (sec / veh):	20.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.516

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Base Volume Input [veh/h]	115	78	185	56	39	80	89	701	134	161	849	26
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	115	78	185	56	39	80	89	701	134	161	849	26
Peak Hour Factor	0.8630	0.8630	0.8630	0.7790	0.7790	0.7790	0.9320	0.9320	0.9320	0.9670	0.9670	0.9670
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	23	54	18	13	26	24	188	36	42	219	7
Total Analysis Volume [veh/h]	133	90	214	72	50	103	95	752	144	166	878	27
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	38	0	0	38	0	12	30	0	22	40	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	25	0	0	19	0	0	18	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	13	13	13	13	6	55	55	10	59	59
g / C, Green / Cycle	0.14	0.14	0.14	0.14	0.14	0.07	0.61	0.61	0.11	0.66	0.66
(v / s)_i Volume / Saturation Flow Rate	0.07	0.05	0.11	0.04	0.08	0.05	0.24	0.23	0.09	0.23	0.01
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1800	1900	1900	1800	3800	1900
c, Capacity [veh/h]	171	271	271	228	271	125	1159	1159	205	2489	1244
d1, Uniform Delay [s]	35.76	34.76	37.32	34.50	36.02	41.20	9.04	8.88	38.94	6.98	5.44
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.43	0.71	5.12	0.78	1.85	9.18	1.02	0.93	7.35	0.39	0.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.78	0.33	0.79	0.32	0.56	0.76	0.40	0.38	0.81	0.35	0.02
d, Delay for Lane Group [s/veh]	43.19	35.48	42.44	35.28	37.86	50.38	10.06	9.81	46.30	7.37	5.47
Lane Group LOS	D	D	D	D	D	D	B	A	D	A	A
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.02	1.81	4.87	1.44	3.23	2.37	4.49	4.16	3.95	3.40	0.17
50th-Percentile Queue Length [ft/ln]	75.51	45.21	121.63	36.07	80.74	59.15	112.22	104.06	98.68	84.94	4.19
95th-Percentile Queue Length [veh/ln]	5.44	3.26	8.48	2.60	5.81	4.26	7.96	7.49	7.10	6.12	0.30
95th-Percentile Queue Length [ft/ln]	135.91	81.38	212.06	64.92	145.34	106.47	199.08	187.30	177.62	152.89	7.54

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	43.19	35.48	42.44	35.28	37.86	37.86	50.38	9.96	9.81	46.30	7.37	5.47
Movement LOS	D	D	D	D	D	D	D	A	A	D	A	A
d_A, Approach Delay [s/veh]	41.23			37.04			13.82			13.35		
Approach LOS	D			D			B			B		
d_I, Intersection Delay [s/veh]	19.95											
Intersection LOS	B											
Intersection V/C	0.516											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.70	34.70	34.70	34.70
l_p,int, Pedestrian LOS Score for Intersection	2.325	2.082	2.899	2.898
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	755	755	577	800
d_b, Bicycle Delay [s]	17.44	17.44	22.78	16.22
l_b,int, Bicycle LOS Score for Intersection	2.281	1.931	2.377	2.443
Bicycle LOS	B	A	B	B

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 5: State College Boulevard at Birch Street

Control Type:	Signalized	Delay (sec / veh):	41.3
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.797

Intersection Setup

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Base Volume Input [veh/h]	130	337	188	287	620	506	306	785	171	173	753	257
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	130	337	188	287	620	506	306	785	171	173	753	257
Peak Hour Factor	0.9440	0.9440	0.9440	0.9150	0.9150	0.9150	0.9030	0.9030	0.9030	0.9260	0.9260	0.9260
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	89	50	78	169	138	85	217	47	47	203	69
Total Analysis Volume [veh/h]	138	357	199	314	678	553	339	869	189	187	813	278
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	10	39	0	27	56	0	17	42	0	12	37	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	28	0	0	30	0	0	28	0	0	26	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	37	37	13	44	44	13	46	46	8	41	41
g / C, Green / Cycle	0.05	0.31	0.31	0.11	0.37	0.37	0.11	0.38	0.38	0.07	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.04	0.09	0.10	0.09	0.34	0.31	0.10	0.23	0.10	0.05	0.21	0.15
s, saturation flow rate [veh/h]	3500	3800	1900	3500	1900	1900	3500	3800	1900	3500	3800	1900
c, Capacity [veh/h]	176	1171	585	386	699	699	380	1450	725	235	1292	646
d1, Uniform Delay [s]	56.34	31.72	32.10	52.20	36.38	34.62	52.80	29.77	25.50	55.19	33.27	30.63
k, delay calibration	0.11	0.11	0.11	0.11	0.31	0.25	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.39	0.15	0.34	4.21	14.12	6.08	7.34	1.84	0.87	6.11	2.33	2.09
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.78	0.30	0.34	0.81	0.93	0.83	0.89	0.60	0.26	0.80	0.63	0.43
d, Delay for Lane Group [s/veh]	63.73	31.86	32.44	56.41	50.50	40.69	60.15	31.61	26.37	61.31	35.60	32.72
Lane Group LOS	E	C	C	E	D	D	E	C	C	E	D	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.25	4.00	4.54	4.84	20.60	16.49	5.42	10.36	3.90	2.99	10.31	6.60
50th-Percentile Queue Length [ft/ln]	56.21	99.97	113.51	121.12	514.90	412.30	135.61	259.02	97.45	74.68	257.70	165.05
95th-Percentile Queue Length [veh/ln]	4.05	7.20	8.03	8.45	28.04	23.15	9.24	15.64	7.02	5.38	15.57	10.82
95th-Percentile Queue Length [ft/ln]	101.17	179.94	200.87	211.37	700.97	578.80	231.10	391.00	175.41	134.42	389.33	270.40

Movement, Approach, & Intersection Results

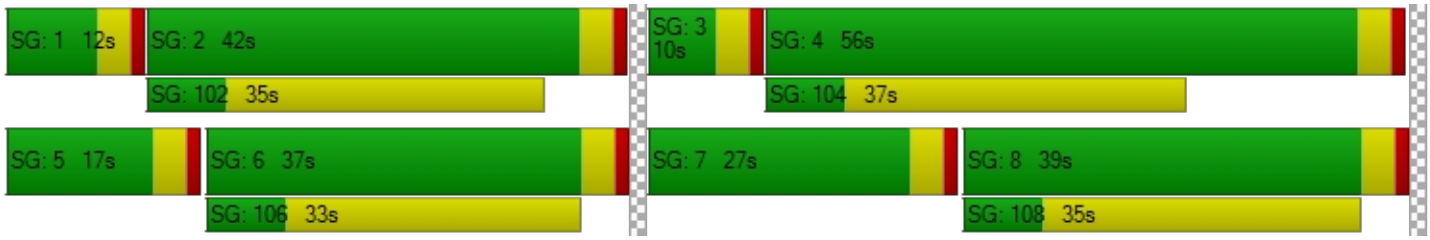
d_M, Delay for Movement [s/veh]	63.73	31.86	32.44	56.41	50.06	40.69	60.15	31.61	26.37	61.31	35.60	32.72
Movement LOS	E	C	C	E	D	D	E	C	C	E	D	C
d_A, Approach Delay [s/veh]	38.36			48.00			37.82			38.74		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	41.34											
Intersection LOS	D											
Intersection V/C	0.797											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.51	49.51	49.51	49.51
l_p,int, Pedestrian LOS Score for Intersection	2.851	2.876	3.012	2.978
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	583	867	633	550
d_b, Bicycle Delay [s]	30.11	19.27	28.02	31.54
l_b,int, Bicycle LOS Score for Intersection	2.132	2.834	2.712	2.614
Bicycle LOS	B	C	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: S Associated Road at Birch Street

Control Type:	Signalized	Delay (sec / veh):	21.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.610

Intersection Setup

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Base Volume Input [veh/h]	341	20	166	12	22	16	10	820	353	148	810	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	341	20	166	12	22	16	10	820	353	148	810	14
Peak Hour Factor	0.9600	0.9600	0.9600	0.7170	0.7170	0.7170	0.9350	0.9350	0.9350	0.9260	0.9260	0.9260
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	89	5	43	4	8	6	3	219	94	40	219	4
Total Analysis Volume [veh/h]	355	21	173	17	31	22	11	877	378	160	875	15
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	8	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups			1,8									
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	6	0	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	30	0	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	24	61	61	0	37	0	10	38	0	11	39	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	26	26	0	26	0	0	27	0	0	26	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No		No		No	No		No	No	
Maximum Recall	No	No	No		No		No	No		No	No	
Pedestrian Recall	No	No	No		No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	C
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	23	34	5	5	2	68	68	7	73	73
g / C, Green / Cycle	0.12	0.21	0.31	0.05	0.05	0.02	0.62	0.62	0.06	0.67	0.67
(v / s)_i Volume / Saturation Flow Rate	0.10	0.01	0.09	0.01	0.03	0.01	0.35	0.31	0.05	0.23	0.23
s, saturation flow rate [veh/h]	3500	1900	1900	1800	1900	1800	1900	1900	3500	1900	1900
c, Capacity [veh/h]	431	396	586	108	92	29	1176	1176	224	1267	1267
d1, Uniform Delay [s]	47.07	34.89	28.95	50.28	51.24	53.59	12.23	11.66	50.52	7.99	7.98
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.99	0.06	0.28	0.68	5.52	7.97	1.93	1.57	4.20	0.77	0.76
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.82	0.05	0.30	0.16	0.57	0.38	0.56	0.51	0.71	0.35	0.35
d, Delay for Lane Group [s/veh]	51.07	34.94	29.22	50.96	56.76	61.56	14.16	13.23	54.71	8.76	8.74
Lane Group LOS	D	C	C	D	E	E	B	B	D	A	A
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.96	0.46	3.52	0.47	1.57	0.37	9.43	8.13	2.29	4.52	4.49
50th-Percentile Queue Length [ft/ln]	124.09	11.47	88.05	11.75	39.25	9.13	235.84	203.33	57.19	113.01	112.13
95th-Percentile Queue Length [veh/ln]	8.62	0.83	6.34	0.85	2.83	0.66	14.47	12.81	4.12	8.01	7.96
95th-Percentile Queue Length [ft/ln]	215.44	20.65	158.48	21.15	70.65	16.43	361.76	320.25	102.94	200.18	198.96

Movement, Approach, & Intersection Results

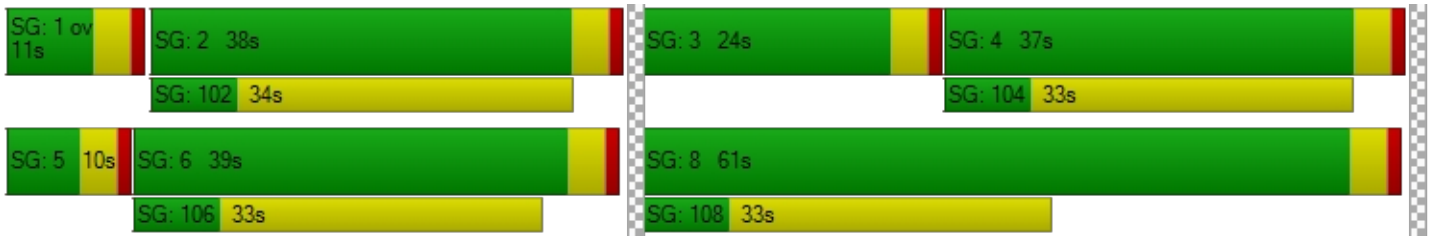
d_M, Delay for Movement [s/veh]	51.07	34.94	29.22	50.96	56.76	56.76	61.56	13.93	13.23	54.71	8.75	8.74
Movement LOS	D	C	C	D	E	E	E	B	B	D	A	A
d_A, Approach Delay [s/veh]	43.57			55.35			14.13			15.75		
Approach LOS	D			E			B			B		
d_I, Intersection Delay [s/veh]	21.20											
Intersection LOS	C											
Intersection V/C	0.610											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	44.56	44.56	44.56	44.56
l_p,int, Pedestrian LOS Score for Intersection	2.644	1.988	2.800	2.831
Crosswalk LOS	B	A	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1036	600	618	636
d_b, Bicycle Delay [s]	12.78	26.96	26.27	25.58
l_b,int, Bicycle LOS Score for Intersection	2.465	1.675	2.604	2.426
Bicycle LOS	B	A	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 7: Randolph Avenue at Madison Way

Control Type:	Signalized	Delay (sec / veh):	20.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.263

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Base Volume Input [veh/h]	22	306	115	72	284	24	38	11	60	83	4	59
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	22	306	115	72	284	24	38	11	60	83	4	59
Peak Hour Factor	0.9200	0.9200	0.9200	0.9030	0.9030	0.9030	0.6380	0.6380	0.6380	0.9310	0.9310	0.9310
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	83	31	20	79	7	15	4	24	22	1	16
Total Analysis Volume [veh/h]	24	333	125	80	315	27	60	17	94	89	4	63
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	6	6	0	6	6	0	0	6	0	0	6	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	26	0	10	26	0	0	54	0	0	54	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	15	0	0	12	0	0	19	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	65	65	5	68	68	7	7	7	7
g / C, Green / Cycle	0.03	0.73	0.73	0.06	0.75	0.75	0.08	0.08	0.08	0.08
(v / s)_i Volume / Saturation Flow Rate	0.01	0.12	0.12	0.04	0.09	0.09	0.03	0.06	0.05	0.04
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1900	1800	1900	1800	1900
c, Capacity [veh/h]	56	1378	1378	106	1430	1430	135	157	93	157
d1, Uniform Delay [s]	42.82	3.89	3.85	41.74	3.03	3.03	39.18	40.23	39.85	39.26
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.01	0.27	0.25	10.43	0.17	0.17	2.28	5.68	32.81	1.82
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.43	0.17	0.16	0.76	0.12	0.12	0.44	0.71	0.95	0.43
d, Delay for Lane Group [s/veh]	47.83	4.16	4.10	52.17	3.20	3.19	41.46	45.90	72.66	41.08
Lane Group LOS	D	A	A	D	A	A	D	D	E	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.60	1.18	1.09	2.04	0.69	0.68	1.33	2.61	2.73	1.47
50th-Percentile Queue Length [ft/ln]	14.95	29.47	27.15	50.92	17.28	16.92	33.27	65.33	68.26	36.82
95th-Percentile Queue Length [veh/ln]	1.08	2.12	1.95	3.67	1.24	1.22	2.40	4.70	4.91	2.65
95th-Percentile Queue Length [ft/ln]	26.91	53.05	48.87	91.65	31.10	30.46	59.88	117.59	122.86	66.28

Movement, Approach, & Intersection Results

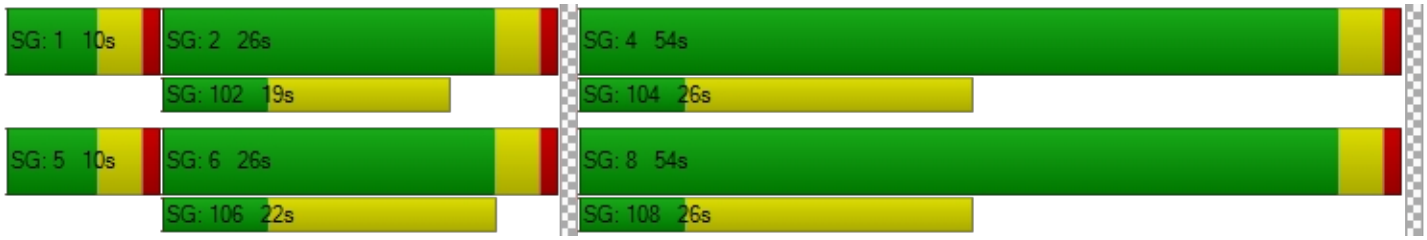
d_M, Delay for Movement [s/veh]	47.83	4.14	4.10	52.17	3.20	3.19	41.46	45.90	45.90	72.66	41.08	41.08
Movement LOS	D	A	A	D	A	A	D	D	D	E	D	D
d_A, Approach Delay [s/veh]	6.30			12.48			44.35			59.10		
Approach LOS	A			B			D			E		
d_I, Intersection Delay [s/veh]	20.40											
Intersection LOS	C											
Intersection V/C	0.263											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	34.68	34.68
l_p,int, Pedestrian LOS Score for Intersection	2.617	2.556	2.013	2.063
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	489	489	1111	1111
d_b, Bicycle Delay [s]	25.70	25.70	8.90	8.90
l_b,int, Bicycle LOS Score for Intersection	1.957	1.908	1.842	1.817
Bicycle LOS	A	A	A	A

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 8: Randolph Avenue at Brea Mall

Control Type:	Signalized	Delay (sec / veh):	26.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.554

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Base Volume Input [veh/h]	23	349	479	52	319	22	25	15	27	474	6	96
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	349	479	52	319	22	25	15	27	474	6	96
Peak Hour Factor	0.9560	0.9560	0.9560	0.8510	0.8510	0.8510	0.8970	0.8970	0.8970	0.8690	0.8690	0.8690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	91	125	15	94	6	7	4	8	136	2	28
Total Analysis Volume [veh/h]	24	365	501	61	375	26	28	17	30	545	7	110
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	6	6	0	6	6	0	0	6	0	0	6	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	28	0	11	29	0	0	30	0	0	36	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	17	0	0	18	0	0	19	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	R	L	C
C, Cycle Length [s]	105	105	105	105	105	105	105	105	105	105
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	65	56	56	65	58	58	5	5	22	22
g / C, Green / Cycle	0.62	0.54	0.54	0.62	0.55	0.55	0.05	0.05	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.01	0.19	0.26	0.03	0.11	0.10	0.03	0.02	0.19	0.17
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1900	1800	1900	1800	1900
c, Capacity [veh/h]	1116	1016	1016	908	1051	1051	92	97	385	406
d1, Uniform Delay [s]	7.66	14.08	15.45	7.82	11.73	11.70	48.50	48.05	39.94	39.18
k, delay calibration	0.11	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.17	0.13
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.01	0.99	1.71	0.14	0.41	0.40	3.95	1.77	9.47	4.45
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.02	0.36	0.49	0.07	0.19	0.19	0.49	0.31	0.87	0.80
d, Delay for Lane Group [s/veh]	7.66	15.07	17.16	7.96	12.13	12.10	52.45	49.82	49.41	43.63
Lane Group LOS	A	B	B	A	B	B	D	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.20	5.10	7.74	0.55	2.41	2.37	1.25	0.80	9.32	8.38
50th-Percentile Queue Length [ft/ln]	5.03	127.53	193.61	13.79	60.25	59.14	31.15	20.10	232.98	209.42
95th-Percentile Queue Length [veh/ln]	0.36	8.81	12.31	0.99	4.34	4.26	2.24	1.45	14.33	13.12
95th-Percentile Queue Length [ft/ln]	9.05	220.13	307.71	24.83	108.45	106.45	56.07	36.18	358.14	328.08

Movement, Approach, & Intersection Results

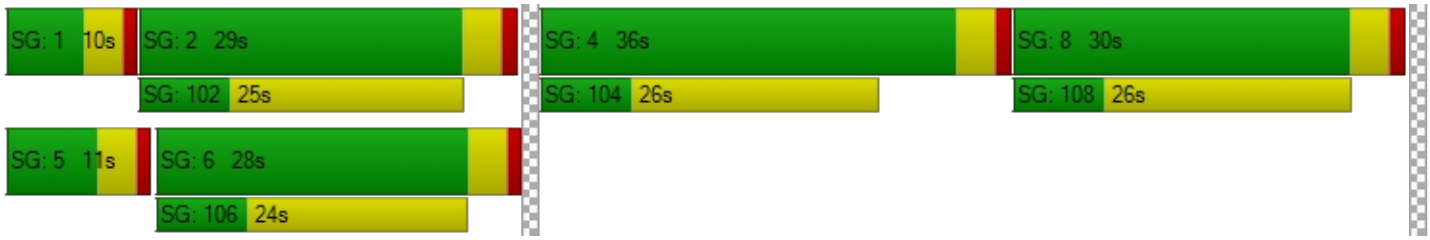
d_M, Delay for Movement [s/veh]	7.66	15.07	17.16	7.96	12.12	12.10	52.45	52.45	49.82	47.19	43.63	43.63
Movement LOS	A	B	B	A	B	B	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	16.04			11.57			51.40			46.57		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	26.00											
Intersection LOS	C											
Intersection V/C	0.554											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	42.09	42.09	42.09	42.09
l_p,int, Pedestrian LOS Score for Intersection	2.666	2.495	2.010	2.399
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	457	476	495	609
d_b, Bicycle Delay [s]	31.26	30.49	29.73	25.39
l_b,int, Bicycle LOS Score for Intersection	2.294	1.941	1.683	2.652
Bicycle LOS	B	A	A	B

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 9: Brea Mall South at State College Boulevard

Control Type:	Signalized	Delay (sec / veh):	33.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.881

Intersection Setup

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Base Volume Input [veh/h]	175	32	94	85	28	610	709	402	30	89	641	45
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	175	32	94	85	28	610	709	402	30	89	641	45
Peak Hour Factor	0.8300	0.8300	0.8300	0.8970	0.8970	0.8970	0.9440	0.9440	0.9440	0.8860	0.8860	0.8860
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	53	10	28	24	8	170	188	106	8	25	181	13
Total Analysis Volume [veh/h]	211	39	113	95	31	680	751	426	32	100	723	51
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	4	5	2	0	1	6	0
Auxiliary Signal Groups						4,5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	6	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	30	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	37	0	0	14	14	37	31	0	38	32	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	26	0	0	0	0	0	20	0	0	21	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No	No	No	No		No	No	
Maximum Recall		No			No	No	No	No		No	No	
Pedestrian Recall		No			No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	C	C	R	L	C	C	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	13	13	10	10	63	32	73	73	8	49	49
g / C, Green / Cycle	0.11	0.11	0.11	0.08	0.08	0.52	0.27	0.61	0.61	0.07	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.05	0.09	0.06	0.05	0.02	0.36	0.21	0.12	0.12	0.06	0.21	0.20
s, saturation flow rate [veh/h]	1800	1800	1900	1800	1900	1900	3500	1900	1900	1800	1900	1900
c, Capacity [veh/h]	222	243	201	151	159	995	936	1152	1152	127	778	778
d1, Uniform Delay [s]	50.61	52.53	51.01	53.20	51.23	21.20	41.00	10.58	10.55	54.89	26.35	26.19
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.28	2.82	2.44	4.31	0.59	3.80	1.65	0.39	0.38	10.18	2.32	2.21
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.42	0.64	0.56	0.63	0.20	0.68	0.80	0.20	0.20	0.79	0.50	0.49
d, Delay for Lane Group [s/veh]	51.90	55.34	53.45	57.51	51.82	25.00	42.65	10.98	10.93	65.07	28.66	28.41
Lane Group LOS	D	E	D	E	D	C	D	B	B	E	C	C
Critical Lane Group	No	Yes	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.74	4.79	3.37	2.96	0.90	14.81	10.52	2.83	2.75	3.34	8.78	8.53
50th-Percentile Queue Length [ft/ln]	68.62	119.71	84.22	73.88	22.45	370.26	262.91	70.70	68.85	83.38	219.58	213.13
95th-Percentile Queue Length [veh/ln]	4.94	8.38	6.06	5.32	1.62	21.12	15.83	5.09	4.96	6.00	13.64	13.31
95th-Percentile Queue Length [ft/ln]	123.51	209.43	151.60	132.99	40.42	528.05	395.87	127.26	123.93	150.09	341.09	332.84

Movement, Approach, & Intersection Results

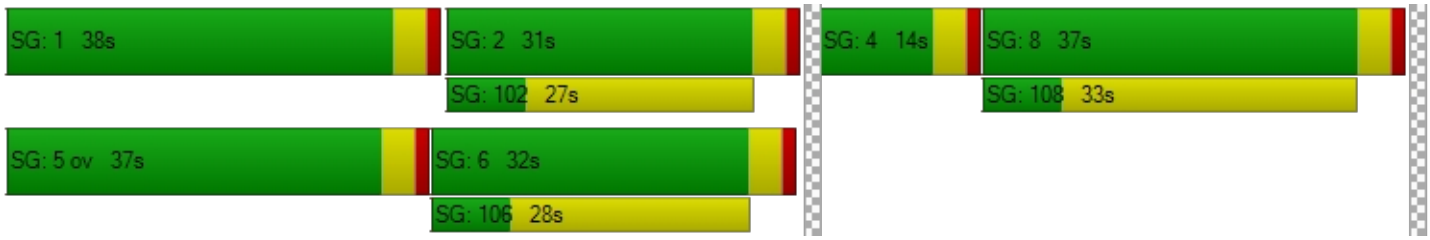
d_M, Delay for Movement [s/veh]	53.73	55.34	53.45	57.51	51.82	25.00	42.65	10.96	10.93	65.07	28.55	28.41
Movement LOS	D	E	D	E	D	C	D	B	B	E	C	C
d_A, Approach Delay [s/veh]	53.86			29.87			30.64			32.72		
Approach LOS	D			C			C			C		
d_I, Intersection Delay [s/veh]	33.60											
Intersection LOS	C											
Intersection V/C	0.881											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.51	49.51	0.00	49.51
l_p,int, Pedestrian LOS Score for Intersection	2.416	2.635	0.000	2.608
Crosswalk LOS	B	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	550	167	450	467
d_b, Bicycle Delay [s]	31.54	50.42	36.04	35.27
l_b,int, Bicycle LOS Score for Intersection	2.159	2.225	2.557	2.281
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 10: Harbor Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	39.9
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.759

Intersection Setup

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	357	800	192	236	827	303	353	1223	283	350	1331	225
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	357	800	192	236	827	303	353	1223	283	350	1331	225
Peak Hour Factor	0.9070	0.9070	0.9070	0.9640	0.9640	0.9640	0.9710	0.9710	0.9710	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	98	221	53	61	214	79	91	315	73	91	347	59
Total Analysis Volume [veh/h]	394	882	212	245	858	314	364	1260	291	365	1386	234
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	20	45	0	14	39	0	19	42	0	19	42	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	31	0	0	28	0	0	31	0	0	29	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	30	30	10	24	24	14	50	50	14	50	50
g / C, Green / Cycle	0.13	0.25	0.25	0.08	0.20	0.20	0.12	0.41	0.41	0.12	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate	0.11	0.15	0.11	0.07	0.15	0.17	0.10	0.28	0.27	0.10	0.24	0.12
s, saturation flow rate [veh/h]	3500	5700	1900	3500	5700	1900	3500	3800	1900	3500	5700	1900
c, Capacity [veh/h]	452	1410	470	296	1157	386	422	1573	787	423	2361	787
d1, Uniform Delay [s]	51.34	40.24	38.29	54.12	44.91	45.71	51.84	28.47	28.07	51.83	27.23	23.50
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.13	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.39	0.46	0.68	5.88	0.96	5.10	5.33	2.25	3.98	5.34	1.08	0.96
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.87	0.63	0.45	0.83	0.74	0.81	0.86	0.67	0.64	0.86	0.59	0.30
d, Delay for Lane Group [s/veh]	56.73	40.70	38.96	60.00	45.87	50.81	57.17	30.72	32.04	57.17	28.31	24.47
Lane Group LOS	E	D	D	E	D	D	E	C	C	E	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	6.15	7.79	5.39	3.89	8.08	9.46	5.69	12.51	12.27	5.70	10.38	4.65
50th-Percentile Queue Length [ft/ln]	153.73	194.63	134.71	97.15	202.04	236.54	142.17	312.80	306.68	142.58	259.55	116.17
95th-Percentile Queue Length [veh/ln]	10.22	12.36	9.20	6.99	12.74	14.51	9.60	18.31	18.01	9.62	15.67	8.18
95th-Percentile Queue Length [ft/ln]	255.40	309.03	229.89	174.86	318.60	362.66	239.95	457.83	450.28	240.49	391.65	204.55

Movement, Approach, & Intersection Results

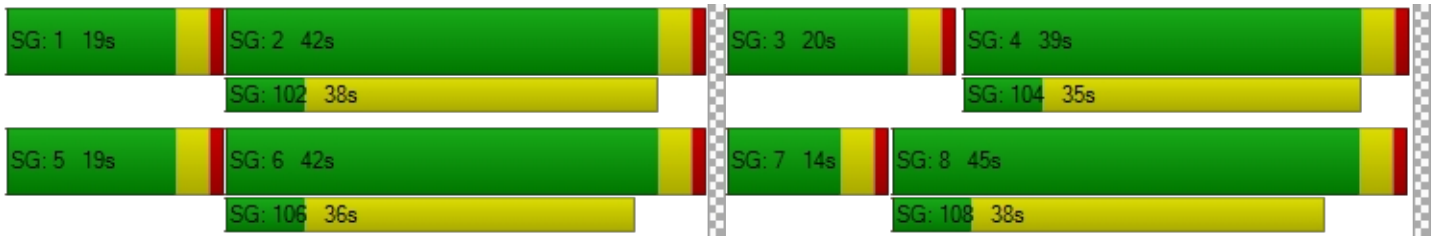
d_M, Delay for Movement [s/veh]	56.73	40.70	38.96	60.00	45.87	50.81	57.17	30.94	32.04	57.17	28.31	24.47
Movement LOS	E	D	D	E	D	D	E	C	C	E	C	C
d_A, Approach Delay [s/veh]	44.70			49.41			36.10			33.16		
Approach LOS	D			D			D			C		
d_I, Intersection Delay [s/veh]	39.89											
Intersection LOS	D											
Intersection V/C	0.759											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.54	49.54	49.54	49.54
l_p,int, Pedestrian LOS Score for Intersection	3.188	3.177	3.228	3.264
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	683	583	633	633
d_b, Bicycle Delay [s]	26.03	30.13	28.04	28.04
l_b,int, Bicycle LOS Score for Intersection	2.378	2.339	2.613	2.651
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 11: Puente Street at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	14.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.518

Intersection Setup

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	27	31	99	166	44	128	82	1402	37	84	1474	195
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	27	31	99	166	44	128	82	1402	37	84	1474	195
Peak Hour Factor	0.8200	0.8200	0.8200	0.7710	0.7710	0.7710	0.9890	0.9890	0.9890	0.9120	0.9120	0.9120
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	9	30	54	14	42	21	354	9	23	404	53
Total Analysis Volume [veh/h]	33	38	121	215	57	166	83	1418	37	92	1616	214
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	40	0	0	40	0	10	37	0	13	40	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	23	0	0	17	0	0	23	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	13	13	13	13	13	5	59	59	6	59	59
g / C, Green / Cycle	0.15	0.15	0.15	0.15	0.15	0.15	0.06	0.65	0.65	0.07	0.66	0.66
(v / s)_i Volume / Saturation Flow Rate	0.02	0.02	0.06	0.12	0.02	0.09	0.05	0.25	0.26	0.05	0.28	0.11
s, saturation flow rate [veh/h]	1800	1900	1900	1800	3800	1900	1800	3800	1900	1800	5700	1900
c, Capacity [veh/h]	291	282	282	283	563	282	110	2474	1237	121	3747	1249
d1, Uniform Delay [s]	33.29	33.35	34.91	37.12	33.18	35.81	41.62	7.33	7.42	41.29	7.38	5.96
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.17	0.22	1.04	4.19	0.08	1.96	9.93	0.46	0.97	9.25	0.36	0.30
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.11	0.13	0.43	0.76	0.10	0.59	0.75	0.39	0.40	0.76	0.43	0.17
d, Delay for Lane Group [s/veh]	33.46	33.56	35.94	41.31	33.26	37.77	51.56	7.79	8.40	50.53	7.74	6.26
Lane Group LOS	C	C	D	D	C	D	D	A	A	D	A	A
Critical Lane Group	No	No	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.63	0.73	2.46	4.83	0.54	3.51	2.10	3.88	4.24	2.30	4.37	1.47
50th-Percentile Queue Length [ft/ln]	15.84	18.29	61.58	120.75	13.49	87.66	52.46	96.98	106.03	57.40	109.35	36.65
95th-Percentile Queue Length [veh/ln]	1.14	1.32	4.43	8.43	0.97	6.31	3.78	6.98	7.62	4.13	7.80	2.64
95th-Percentile Queue Length [ft/ln]	28.51	32.92	110.84	210.86	24.27	157.78	94.42	174.56	190.46	103.32	195.09	65.96

Movement, Approach, & Intersection Results

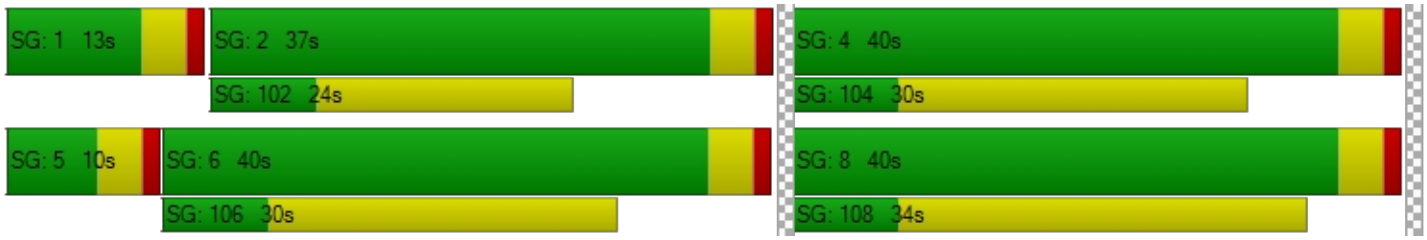
d_M, Delay for Movement [s/veh]	33.46	33.56	35.94	41.31	33.26	37.77	51.56	7.99	8.40	50.53	7.74	6.26
Movement LOS	C	C	D	D	C	D	D	A	A	D	A	A
d_A, Approach Delay [s/veh]	35.04			38.92			10.35			9.63		
Approach LOS	D			D			B			A		
d_I, Intersection Delay [s/veh]	14.23											
Intersection LOS	B											
Intersection V/C	0.518											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.70	34.70	34.70	34.70
l_p,int, Pedestrian LOS Score for Intersection	2.373	2.450	3.107	3.479
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	800	800	733	800
d_b, Bicycle Delay [s]	16.22	16.22	18.07	16.22
l_b,int, Bicycle LOS Score for Intersection	1.876	1.921	2.406	2.617
Bicycle LOS	A	A	B	B

Sequence

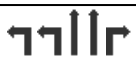
Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: Brea Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	49.6
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.930

Intersection Setup

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	437	574	294	467	933	253	274	1454	288	385	1433	414
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	437	574	294	467	933	253	274	1454	288	385	1433	414
Peak Hour Factor	0.9240	0.9240	0.9240	0.9170	0.9170	0.9170	0.9130	0.9130	0.9130	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	118	155	80	127	254	69	75	398	79	108	403	116
Total Analysis Volume [veh/h]	473	621	318	509	1017	276	300	1593	315	433	1610	465
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	21	41	0	20	40	0	15	41	0	18	44	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	30	0	0	28	0	0	30	0	0	30	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	17	36	36	16	35	35	11	38	38	14	41	41
g / C, Green / Cycle	0.14	0.30	0.30	0.13	0.29	0.29	0.09	0.32	0.32	0.12	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.14	0.11	0.17	0.15	0.27	0.15	0.09	0.28	0.17	0.12	0.28	0.24
s, saturation flow rate [veh/h]	3500	5700	1900	3500	3800	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	497	1682	561	468	1090	545	323	1829	610	410	1971	657
d1, Uniform Delay [s]	51.10	33.48	35.83	52.00	41.70	35.73	54.11	38.43	33.19	53.00	35.81	34.02
k, delay calibration	0.11	0.11	0.12	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.41	0.14	1.01	47.90	4.36	0.73	11.60	6.02	3.11	37.38	3.89	6.33
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.95	0.37	0.57	1.09	0.93	0.51	0.93	0.87	0.52	1.06	0.82	0.71
d, Delay for Lane Group [s/veh]	61.51	33.62	36.84	99.90	46.06	36.46	65.71	44.45	36.30	90.38	39.71	40.36
Lane Group LOS	E	C	D	F	D	D	E	D	D	F	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	7.75	4.81	8.02	10.14	15.15	6.85	5.01	15.59	7.99	8.29	14.88	12.82
50th-Percentile Queue Length [ft/ln]	193.86	120.14	200.60	253.46	378.82	171.26	125.35	389.78	199.82	207.36	371.90	320.42
95th-Percentile Queue Length [veh/ln]	12.32	8.40	12.67	15.93	21.54	11.14	8.69	22.07	12.63	13.31	21.20	18.69
95th-Percentile Queue Length [ft/ln]	308.03	210.02	316.74	398.16	538.42	278.58	217.16	551.67	315.74	332.78	530.04	467.21

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	61.51	33.62	36.84	99.90	46.06	36.46	65.71	44.45	36.30	90.38	39.71	40.36
Movement LOS	E	C	D	F	D	D	E	D	D	F	D	D
d_A, Approach Delay [s/veh]	43.69			59.80			46.18			48.57		
Approach LOS	D			E			D			D		
d_I, Intersection Delay [s/veh]	49.59											
Intersection LOS	D											
Intersection V/C	0.930											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.52	49.52	49.52	49.52
l_p,int, Pedestrian LOS Score for Intersection	3.126	3.128	3.358	3.397
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	617	600	617	666
d_b, Bicycle Delay [s]	28.72	29.41	28.72	26.68
l_b,int, Bicycle LOS Score for Intersection	2.336	3.046	2.774	2.939
Bicycle LOS	B	C	C	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 13: Randolph Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	52.9
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.950

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	102	47	199	446	86	352	344	1626	65	142	1880	496
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	102	47	199	446	86	352	344	1626	65	142	1880	496
Peak Hour Factor	0.8250	0.8250	0.8250	0.9010	0.9010	0.9010	0.9400	0.9400	0.9400	0.9820	0.9820	0.9820
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	31	14	60	124	24	98	91	432	17	36	479	126
Total Analysis Volume [veh/h]	124	57	241	495	95	391	366	1730	69	145	1914	505
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	19	0	0	40	0	17	47	0	14	44	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	29	0	0	28	0	0	29	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	17	17	17	33	33	13	44	44	10	41	41
g / C, Green / Cycle	0.14	0.14	0.14	0.28	0.28	0.11	0.36	0.36	0.08	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.07	0.03	0.13	0.14	0.26	0.10	0.31	0.32	0.08	0.34	0.27
s, saturation flow rate [veh/h]	1800	1800	1900	3500	1900	3500	3800	1900	1800	5700	1900
c, Capacity [veh/h]	257	257	271	970	527	381	1380	690	151	1928	643
d1, Uniform Delay [s]	47.40	45.58	50.55	36.53	42.14	53.24	35.40	35.96	54.79	39.59	35.81
k, delay calibration	0.11	0.11	0.11	0.11	0.35	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.41	0.43	9.71	0.42	18.60	13.98	7.16	15.88	25.48	18.90	9.37
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.48	0.22	0.89	0.51	0.92	0.96	0.86	0.89	0.96	0.99	0.79
d, Delay for Lane Group [s/veh]	48.81	46.01	60.26	36.95	60.74	67.22	42.56	51.85	80.27	58.49	45.19
Lane Group LOS	D	D	E	D	E	E	D	D	F	E	D
Critical Lane Group	No	No	Yes	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.52	1.54	7.83	6.17	16.58	6.22	17.17	19.65	5.43	21.78	14.86
50th-Percentile Queue Length [ft/ln]	88.11	38.61	195.66	154.33	414.46	155.61	429.26	491.25	135.82	544.59	371.40
95th-Percentile Queue Length [veh/ln]	6.34	2.78	12.41	10.25	23.26	10.32	23.97	26.92	9.26	29.44	21.18
95th-Percentile Queue Length [ft/ln]	158.60	69.49	310.36	256.20	581.39	257.89	599.15	673.00	231.39	735.95	529.42

Movement, Approach, & Intersection Results

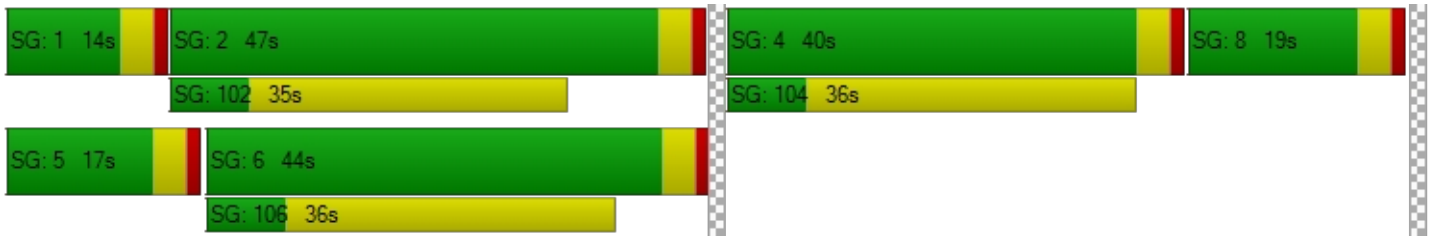
d_M, Delay for Movement [s/veh]	48.81	46.01	60.26	36.95	60.74	60.74	67.22	45.48	51.85	80.27	58.49	45.19
Movement LOS	D	D	E	D	E	E	E	D	D	F	E	D
d_A, Approach Delay [s/veh]	54.97			48.73			49.36			57.10		
Approach LOS	D			D			D			E		
d_I, Intersection Delay [s/veh]	52.88											
Intersection LOS	D											
Intersection V/C	0.950											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.52	49.52	49.52	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.323	2.686	3.299	0.000
Crosswalk LOS	B	B	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	250	600	716	666
d_b, Bicycle Delay [s]	45.95	29.41	24.72	26.68
l_b,int, Bicycle LOS Score for Intersection	1.908	3.178	2.750	2.970
Bicycle LOS	A	C	C	C

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 14: State College Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	165.2
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.394

Intersection Setup

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	331	564	607	655	443	186	139	1695	233	684	2092	991
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	331	564	607	655	443	186	139	1695	233	684	2092	991
Peak Hour Factor	0.9800	0.9800	0.9800	0.8330	0.8330	0.8330	0.9250	0.9250	0.9250	0.9230	0.9230	0.9230
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	84	144	155	197	133	56	38	458	63	185	567	268
Total Analysis Volume [veh/h]	338	576	619	786	532	223	150	1832	252	741	2267	1074
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	30	41	0	28	39	0	10	34	0	17	41	41
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	30	0	0	28	0	0	23	0	0	23	23
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	14	37	37	24	47	47	6	30	30	13	37	65
g / C, Green / Cycle	0.12	0.31	0.31	0.20	0.39	0.39	0.05	0.25	0.25	0.11	0.31	0.54
(v / s)_i Volume / Saturation Flow Rate	0.10	0.15	0.33	0.39	0.21	0.19	0.04	0.27	0.28	0.21	0.40	0.57
s, saturation flow rate [veh/h]	3500	3800	1900	2000	1900	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	412	1167	583	400	740	740	176	1431	477	380	1762	1031
d1, Uniform Delay [s]	51.70	33.96	41.59	48.01	28.17	27.70	56.54	44.95	44.95	53.50	41.46	27.45
k, delay calibration	0.11	0.11	0.50	0.29	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.07	0.32	54.45	439.37	0.61	0.51	10.83	51.47	73.60	429.51	133.29	39.54
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.82	0.49	1.06	1.96	0.53	0.49	0.85	1.09	1.11	1.95	1.29	1.04
d, Delay for Lane Group [s/veh]	55.77	34.29	96.03	487.38	28.78	28.21	67.37	96.43	118.55	483.01	174.75	66.99
Lane Group LOS	E	C	F	F	C	C	E	F	F	F	F	F
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.20	6.91	25.83	30.36	8.70	7.98	2.52	20.89	23.82	28.39	38.89	39.22
50th-Percentile Queue Length [ft/ln]	129.90	172.71	645.79	759.07	217.58	199.44	63.01	522.23	595.51	709.79	972.31	980.45
95th-Percentile Queue Length [veh/ln]	8.93	11.22	35.52	49.71	13.54	12.61	4.54	29.82	33.78	44.97	56.89	51.23
95th-Percentile Queue Length [ft/ln]	223.36	280.47	888.08	1242.73	338.53	315.24	113.41	745.60	844.62	1124.17	1422.36	1280.67

Movement, Approach, & Intersection Results

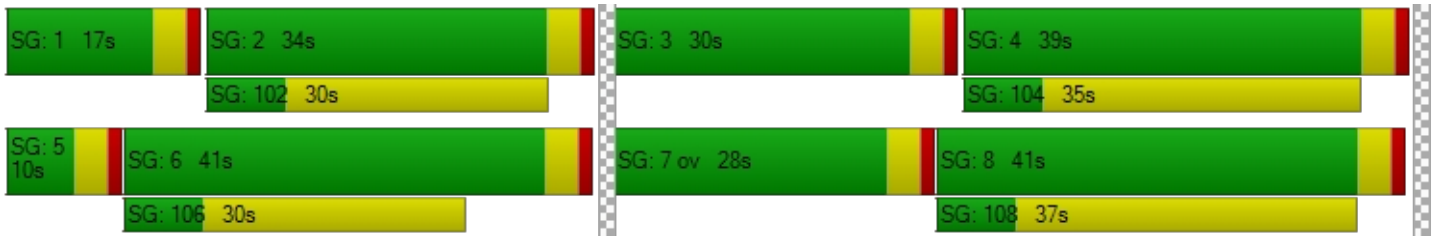
d_M, Delay for Movement [s/veh]	55.77	34.29	96.03	487.38	28.63	28.21	67.37	99.76	118.55	483.01	174.75	66.99
Movement LOS	E	C	F	F	C	C	E	F	F	F	F	F
d_A, Approach Delay [s/veh]	63.96			262.56			99.70			202.35		
Approach LOS	E			F			F			F		
d_I, Intersection Delay [s/veh]	165.22											
Intersection LOS	F											
Intersection V/C	1.394											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.51	49.51	49.51	49.51
l_p,int, Pedestrian LOS Score for Intersection	3.034	3.010	3.411	3.694
Crosswalk LOS	C	C	C	D
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	617	583	500	617
d_b, Bicycle Delay [s]	28.71	30.11	33.76	28.71
l_b,int, Bicycle LOS Score for Intersection	2.824	2.831	2.481	3.805
Bicycle LOS	C	C	B	D

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 15: SR-57 SB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	21.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.856

Intersection Setup

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	0	0	0	555	0	782	0	2051	1213	0	2838	349
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	555	0	782	0	2051	1213	0	2838	349
Peak Hour Factor	1.0000	1.0000	1.0000	0.9240	1.0000	0.9240	1.0000	0.9460	0.9460	1.0000	0.9730	0.9730
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	150	0	212	0	542	321	0	729	90
Total Analysis Volume [veh/h]	0	0	0	601	0	846	0	2168	1282	0	2917	359
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	7	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	6	0	0	0	6	0	0	6	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	55	0	0	0	45	0	0	45	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	15	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	C
C, Cycle Length [s]		100	100	100	100	100
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		32	32	32	60	60
g / C, Green / Cycle		0.32	0.32	0.32	0.60	0.60
(v / s)_i Volume / Saturation Flow Rate		0.28	0.28	0.25	0.38	0.51
s, saturation flow rate [veh/h]		1750	1750	1900	5700	5700
c, Capacity [veh/h]		564	564	612	3408	3408
d1, Uniform Delay [s]		31.69	31.69	30.76	13.03	16.54
k, delay calibration		0.12	0.12	0.11	0.50	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		4.38	4.38	2.31	0.92	3.00
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.86	0.86	0.79	0.64	0.86
d, Delay for Lane Group [s/veh]		36.07	36.07	33.08	13.95	19.54
Lane Group LOS		D	D	C	B	B
Critical Lane Group		Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]		11.29	11.29	10.69	9.96	17.45
50th-Percentile Queue Length [ft/ln]		282.25	282.25	267.20	248.90	436.32
95th-Percentile Queue Length [veh/ln]		16.80	16.80	16.05	15.13	24.30
95th-Percentile Queue Length [ft/ln]		420.01	420.01	401.24	378.27	607.60

Movement, Approach, & Intersection Results

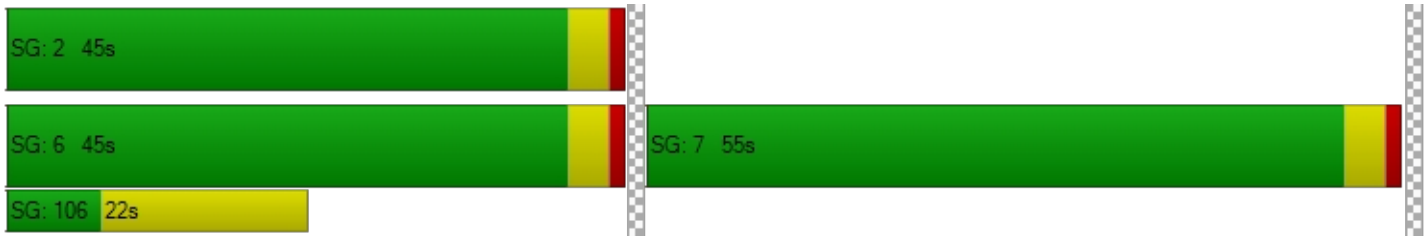
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	36.07	0.00	34.36	0.00	13.95	0.00	0.00	19.54	0.00
Movement LOS				D		C		B			B	
d_A, Approach Delay [s/veh]	0.00			35.07			13.95			19.54		
Approach LOS	A			D			B			B		
d_I, Intersection Delay [s/veh]	21.12											
Intersection LOS	C											
Intersection V/C	0.856											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	39.57	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	2.489	0.000	0.000
Crosswalk LOS	F	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1021	821	821
d_b, Bicycle Delay [s]	49.97	11.98	17.38	17.38
l_b,int, Bicycle LOS Score for Intersection	4.132	3.947	2.752	3.164
Bicycle LOS	D	D	C	C

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 16: SR-57 NB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	34.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.859

Intersection Setup

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	1506	73	606	0	0	258	237	2014	603	0	2051	36
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1506	73	606	0	0	258	237	2014	603	0	2051	36
Peak Hour Factor	0.9320	0.9320	0.9320	1.0000	1.0000	0.8040	0.9340	0.9340	0.9340	1.0000	0.9510	0.9510
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	404	20	163	0	0	80	63	539	161	0	539	9
Total Analysis Volume [veh/h]	1616	78	650	0	0	321	254	2156	646	0	2157	38
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Overlap	Protecte	Permiss	Unsigna	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	0	5	5	2	0	0	6	0
Auxiliary Signal Groups						5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	6	0	0	0	6	6	6	0	0	6	0
Maximum Green [s]	0	30	0	0	0	30	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	1.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	51	0	0	0	23	23	64	0	0	41	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	22	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No				No		No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No				No	No	No			No	
Maximum Recall		No				No	No	No			No	
Pedestrian Recall		No				No	No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	R	L	C	C	C
C, Cycle Length [s]	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	44	44	44	18	18	63	41	41
g / C, Green / Cycle	0.38	0.38	0.38	0.16	0.16	0.55	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.33	0.34	0.31	0.08	0.14	0.38	0.29	0.29
s, saturation flow rate [veh/h]	3500	1750	1900	3800	1800	5700	5700	1900
c, Capacity [veh/h]	1332	666	723	599	284	3134	2037	679
d1, Uniform Delay [s]	32.91	33.40	32.10	44.54	47.48	18.73	33.38	33.38
k, delay calibration	0.11	0.34	0.29	0.11	0.11	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.84	12.24	6.23	0.75	10.11	1.26	3.58	10.01
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.87	0.89	0.82	0.54	0.90	0.69	0.81	0.81
d, Delay for Lane Group [s/veh]	34.75	45.64	38.33	45.29	57.59	19.99	36.95	43.39
Lane Group LOS	C	D	D	D	E	B	D	D
Critical Lane Group	No	Yes	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	14.90	17.48	15.87	4.27	7.90	13.65	14.29	15.50
50th-Percentile Queue Length [ft/ln]	372.44	436.98	396.82	106.82	197.49	341.35	357.22	387.56
95th-Percentile Queue Length [veh/ln]	21.23	24.34	22.41	7.66	12.51	19.71	20.49	21.96
95th-Percentile Queue Length [ft/ln]	530.69	608.40	560.16	191.56	312.73	492.85	512.20	548.99

Movement, Approach, & Intersection Results

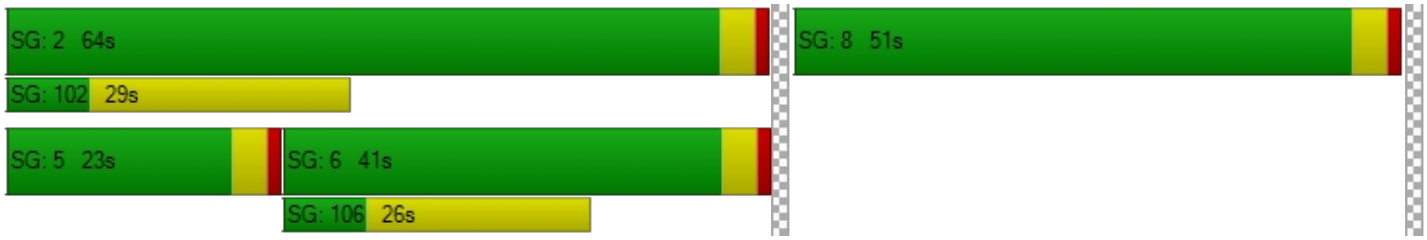
d_M, Delay for Movement [s/veh]	37.81	45.64	39.05	0.00	0.00	45.29	57.59	19.99	0.00	0.00	38.48	43.39
Movement LOS	D	D	D			D	E	B			D	D
d_A, Approach Delay [s/veh]	38.42			45.29			23.95			38.56		
Approach LOS	D			D			C			D		
d_I, Intersection Delay [s/veh]	33.97											
Intersection LOS	C											
Intersection V/C	0.859											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	47.01	47.01	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.769	2.176	0.000	0.000
Crosswalk LOS	C	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	818	331	1044	644
d_b, Bicycle Delay [s]	20.09	40.06	13.14	26.44
l_b,int, Bicycle LOS Score for Intersection	5.427	1.560	2.885	2.465
Bicycle LOS	F	A	C	B

Sequence

Ring 1	-	2	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 17: Associated Road at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	37.3
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.855

Intersection Setup

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	250	186	115	313	238	194	244	1929	257	152	1688	217
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	250	186	115	313	238	194	244	1929	257	152	1688	217
Peak Hour Factor	0.9140	0.9140	0.9140	0.8970	0.8970	0.8970	0.9020	0.9020	0.9020	0.9490	0.9490	0.9490
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	68	51	31	87	66	54	68	535	71	40	445	57
Total Analysis Volume [veh/h]	274	204	126	349	265	216	271	2139	285	160	1779	229
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	15	39	0	18	42	0	27	47	0	16	36	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	28	0	0	29	0	0	26	0	0	25	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	17	17	14	19	19	20	61	61	12	54	54
g / C, Green / Cycle	0.09	0.14	0.14	0.12	0.16	0.16	0.17	0.51	0.51	0.10	0.45	0.45
(v / s)_i Volume / Saturation Flow Rate	0.08	0.09	0.08	0.10	0.14	0.11	0.15	0.42	0.43	0.09	0.26	0.27
s, saturation flow rate [veh/h]	3500	1900	1900	3500	1900	1900	1800	3800	1900	1800	5700	1900
c, Capacity [veh/h]	323	264	264	404	308	308	300	1944	972	181	2540	847
d1, Uniform Delay [s]	53.67	48.99	48.45	52.18	48.95	47.53	49.09	24.71	25.31	53.31	25.03	25.22
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.16	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.20	2.81	2.08	5.60	6.94	2.89	13.63	4.07	9.18	13.11	1.01	3.17
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.66	0.59	0.86	0.86	0.70	0.90	0.82	0.85	0.88	0.59	0.60
d, Delay for Lane Group [s/veh]	59.87	51.79	50.53	57.78	55.89	50.41	62.71	28.79	34.49	66.41	26.04	28.39
Lane Group LOS	E	D	D	E	E	D	E	C	C	E	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.35	5.17	4.53	5.47	8.31	6.35	9.08	19.56	22.00	5.42	10.79	11.61
50th-Percentile Queue Length [ft/ln]	108.73	129.22	113.14	136.84	207.72	158.80	227.05	488.92	549.94	135.51	269.80	290.19
95th-Percentile Queue Length [veh/ln]	7.77	8.90	8.01	9.31	13.04	10.49	14.02	26.81	29.69	9.24	16.18	17.20
95th-Percentile Queue Length [ft/ln]	194.24	222.43	200.36	232.76	325.90	262.14	350.61	670.24	742.24	230.97	404.49	429.88

Movement, Approach, & Intersection Results

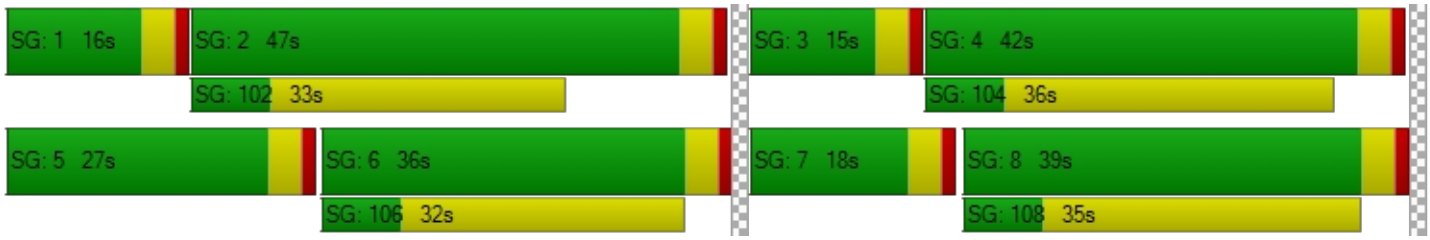
d_M, Delay for Movement [s/veh]	59.87	51.61	50.53	57.78	55.89	50.41	62.71	30.23	34.49	66.41	26.41	28.39
Movement LOS	E	D	D	E	E	D	E	C	C	E	C	C
d_A, Approach Delay [s/veh]	55.13			55.26			33.95			29.57		
Approach LOS	E			E			C			C		
d_I, Intersection Delay [s/veh]	37.28											
Intersection LOS	D											
Intersection V/C	0.855											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.52	49.52	49.52	49.52
l_p,int, Pedestrian LOS Score for Intersection	2.570	2.716	3.344	3.322
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	583	633	716	533
d_b, Bicycle Delay [s]	30.12	28.03	24.72	32.28
l_b,int, Bicycle LOS Score for Intersection	2.058	2.929	3.042	2.454
Bicycle LOS	B	C	C	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 18: Castlegate Lane/Placentia Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	23.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.816

Intersection Setup

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	184	18	244	27	11	12	25	2050	312	212	1960	48
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	184	18	244	27	11	12	25	2050	312	212	1960	48
Peak Hour Factor	0.9770	0.9770	0.9770	0.8650	0.8650	0.8650	0.9010	0.9010	0.9010	0.9030	0.9030	0.9030
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	47	5	62	8	3	3	7	569	87	59	543	13
Total Analysis Volume [veh/h]	188	18	250	31	13	14	28	2275	346	235	2171	53
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	26	0	0	10	0	10	32	0	27	49	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	15	0	0	0	0	0	21	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	C
C, Cycle Length [s]	95	95	95	95	95	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	15	15	5	5	3	45	45	14	56	56
g / C, Green / Cycle	0.16	0.16	0.16	0.05	0.05	0.03	0.47	0.47	0.15	0.59	0.59
(v / s)_i Volume / Saturation Flow Rate	0.06	0.06	0.13	0.02	0.01	0.02	0.40	0.18	0.13	0.38	0.40
s, saturation flow rate [veh/h]	1750	1750	1900	1800	1900	1800	5700	1900	1800	3800	1900
c, Capacity [veh/h]	277	277	300	91	96	62	2680	893	275	2237	1119
d1, Uniform Delay [s]	35.82	35.84	38.83	43.63	43.50	45.07	22.23	16.33	39.27	13.07	13.44
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.83	0.84	5.95	2.18	1.57	5.12	3.59	1.27	7.41	1.50	3.37
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.37	0.37	0.83	0.34	0.28	0.45	0.85	0.39	0.85	0.65	0.68
d, Delay for Lane Group [s/veh]	36.65	36.68	44.79	45.81	45.06	50.20	25.82	17.60	46.68	14.57	16.81
Lane Group LOS	D	D	D	D	D	D	C	B	D	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.17	2.19	6.07	0.76	0.65	0.73	14.88	5.00	5.84	9.90	11.17
50th-Percentile Queue Length [ft/ln]	54.30	54.79	151.71	18.89	16.25	18.29	371.91	125.08	145.94	247.53	279.21
95th-Percentile Queue Length [veh/ln]	3.91	3.95	10.11	1.36	1.17	1.32	21.20	8.67	9.80	15.06	16.65
95th-Percentile Queue Length [ft/ln]	97.75	98.63	252.70	34.00	29.25	32.93	530.05	216.78	245.00	376.54	416.23

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	36.66	36.68	44.79	45.81	45.06	45.06	50.20	25.82	17.60	46.68	15.30	16.81
Movement LOS	D	D	D	D	D	D	D	C	B	D	B	B
d_A, Approach Delay [s/veh]	41.12			45.46			25.00			18.33		
Approach LOS	D			D			C			B		
d_I, Intersection Delay [s/veh]	23.60											
Intersection LOS	C											
Intersection V/C	0.816											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	37.18	37.18	0.00	37.18
l_p,int, Pedestrian LOS Score for Intersection	2.389	1.994	0.000	3.295
Crosswalk LOS	B	A	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	463	126	589	947
d_b, Bicycle Delay [s]	28.09	41.73	23.66	13.19
l_b,int, Bicycle LOS Score for Intersection	2.312	1.655	3.017	2.912
Bicycle LOS	B	A	C	C

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

APPENDIX D-IV

YEAR 2026 PLUS PROJECT WITH IMPROVEMENTS TRAFFIC CONDITIONS

Brea Mall Expansion, Brea

Vistro File: N:\...\4099 HCM Network.vistro
Report File: N:\...\AM 2026+P-MIT.pdf

Scenario 21 [MIT] AM 2026+P
4/13/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
14	State College Boulevard at Imperial Highway	Signalized	HCM 6th Edition	SB Left	0.842	34.1	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 14: State College Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	34.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.842

Intersection Setup

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	119	178	429	126	407	28	35	1725	204	462	1859	196
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	119	178	429	126	407	28	35	1725	204	462	1859	196
Peak Hour Factor	0.9050	0.9050	0.9050	0.9420	0.9420	0.9420	0.9090	0.9090	0.9090	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	49	119	33	108	7	10	474	56	128	516	54
Total Analysis Volume [veh/h]	131	197	474	134	432	30	39	1898	224	513	2066	218
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	12	41	0	10	39	0	10	37	0	22	49	49
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	30	0	0	28	0	0	23	0	0	26	26
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	6	30	30	6	30	30	4	40	40	18	54	64
g / C, Green / Cycle	0.05	0.27	0.27	0.05	0.27	0.27	0.04	0.36	0.36	0.16	0.49	0.58
(v / s)_i Volume / Saturation Flow Rate	0.04	0.05	0.25	0.04	0.11	0.02	0.01	0.28	0.28	0.15	0.36	0.11
s, saturation flow rate [veh/h]	3500	3800	1900	3500	3800	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	193	1032	516	194	1032	516	136	2079	693	570	2786	1103
d1, Uniform Delay [s]	51.04	30.80	38.92	51.08	32.95	29.67	51.42	30.73	31.06	45.20	22.57	10.95
k, delay calibration	0.11	0.11	0.27	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.10	0.09	15.09	4.37	0.27	0.05	1.14	2.68	8.52	5.46	1.83	0.40
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.68	0.19	0.92	0.69	0.42	0.06	0.29	0.76	0.78	0.90	0.74	0.20
d, Delay for Lane Group [s/veh]	55.15	30.89	54.01	55.45	33.22	29.72	52.55	33.41	39.58	50.65	24.40	11.35
Lane Group LOS	E	C	D	E	C	C	D	C	D	D	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.88	2.02	14.39	1.93	4.76	0.60	0.54	12.57	14.15	7.26	14.23	2.57
50th-Percentile Queue Length [ft/ln]	47.00	50.61	359.83	48.23	118.94	14.92	13.61	314.25	353.83	181.46	355.73	64.31
95th-Percentile Queue Length [veh/ln]	3.38	3.64	20.62	3.47	8.33	1.07	0.98	18.38	20.32	11.68	20.42	4.63
95th-Percentile Queue Length [ft/ln]	84.60	91.10	515.38	86.82	208.37	26.86	24.49	459.61	508.08	291.92	510.39	115.75

Movement, Approach, & Intersection Results

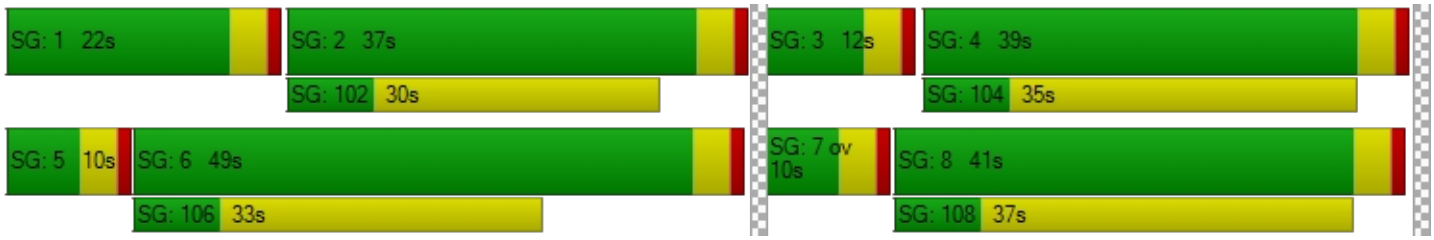
d_M, Delay for Movement [s/veh]	55.15	30.89	54.01	55.45	33.22	29.72	52.55	34.44	39.58	50.65	24.40	11.35
Movement LOS	E	C	D	E	C	C	D	C	D	D	C	B
d_A, Approach Delay [s/veh]	48.52			38.04			35.30			28.19		
Approach LOS	D			D			D			C		
d_I, Intersection Delay [s/veh]	34.10											
Intersection LOS	C											
Intersection V/C	0.842											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	44.58	44.58	44.58	44.58
l_p,int, Pedestrian LOS Score for Intersection	2.878	2.750	3.334	3.493
Crosswalk LOS	C	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	672	636	600	818
d_b, Bicycle Delay [s]	24.25	25.59	26.97	19.23
l_b,int, Bicycle LOS Score for Intersection	2.221	2.051	2.451	3.098
Bicycle LOS	B	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Brea Mall Expansion, Brea

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Scenario 20 [MIT] PM 2026+P
4/13/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
14	State College Boulevard at Imperial Highway	Signalized	HCM 6th Edition	SB Left	0.934	45.0	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 14: State College Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	45.0
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.934

Intersection Setup

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	391	625	370	463	323	98	112	1991	116	474	2019	574
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	391	625	370	463	323	98	112	1991	116	474	2019	574
Peak Hour Factor	0.8990	0.8990	0.8990	0.8970	0.8970	0.8970	0.9570	0.9570	0.9570	0.9550	0.9550	0.9550
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	109	174	103	129	90	27	29	520	30	124	529	150
Total Analysis Volume [veh/h]	435	695	412	516	360	109	117	2080	121	496	2114	601
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	23	41	0	21	39	0	10	37	0	21	48	48
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	30	0	0	28	0	0	23	0	0	26	26
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	17	30	30	17	30	30	6	40	40	17	52	73
g / C, Green / Cycle	0.14	0.25	0.25	0.14	0.25	0.25	0.05	0.34	0.34	0.14	0.43	0.60
(v / s)_i Volume / Saturation Flow Rate	0.12	0.18	0.22	0.15	0.09	0.06	0.03	0.29	0.30	0.14	0.37	0.32
s, saturation flow rate [veh/h]	3500	3800	1900	3500	3800	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	497	935	467	497	935	468	174	1919	640	497	2445	1148
d1, Uniform Delay [s]	50.47	41.76	43.57	51.51	37.69	36.19	56.08	36.95	37.91	51.49	31.12	13.75
k, delay calibration	0.11	0.11	0.24	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.06	1.19	11.35	29.53	0.26	0.25	4.44	4.85	18.13	18.27	4.39	1.71
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.88	0.74	0.88	1.04	0.38	0.23	0.67	0.85	0.90	1.00	0.86	0.52
d, Delay for Lane Group [s/veh]	55.53	42.95	54.92	81.03	37.95	36.44	60.52	41.80	56.03	69.76	35.51	15.46
Lane Group LOS	E	D	D	F	D	D	E	D	E	E	D	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	6.74	9.62	13.18	9.49	4.46	2.61	1.85	15.42	19.11	8.70	19.07	9.60
50th-Percentile Queue Length [ft/ln]	168.51	240.49	329.55	237.28	111.45	65.15	46.28	385.62	477.70	217.39	476.75	239.94
95th-Percentile Queue Length [veh/ln]	11.00	14.71	19.14	14.79	7.92	4.69	3.33	21.87	26.28	13.53	26.23	14.68
95th-Percentile Queue Length [ft/ln]	274.95	367.65	478.41	369.77	198.02	117.26	83.30	546.64	656.92	338.29	655.79	366.96

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	55.53	42.95	54.92	81.03	37.95	36.44	60.52	44.91	56.03	69.76	35.51	15.46
Movement LOS	E	D	D	F	D	D	E	D	E	E	D	B
d_A, Approach Delay [s/veh]	49.70			60.35			46.28			37.05		
Approach LOS	D			E			D			D		
d_I, Intersection Delay [s/veh]	44.98											
Intersection LOS	D											
Intersection V/C	0.934											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.52	49.52	49.52	49.52
l_p,int, Pedestrian LOS Score for Intersection	2.959	2.942	3.402	3.587
Crosswalk LOS	C	C	C	D
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	617	583	550	733
d_b, Bicycle Delay [s]	28.72	30.12	31.55	24.08
l_b,int, Bicycle LOS Score for Intersection	2.832	2.372	2.516	3.326
Bicycle LOS	C	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Brea Mall Expansion, Brea

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Scenario 19 [MIT] Sat MD 2026+P
4/13/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
14	State College Boulevard at Imperial Highway	Signalized	HCM 6th Edition	SB Left	1.200	108.6	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 14: State College Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	108.6
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.200

Intersection Setup

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	331	564	607	655	443	186	139	1695	233	684	2092	991
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	331	564	607	655	443	186	139	1695	233	684	2092	991
Peak Hour Factor	0.9800	0.9800	0.9800	0.8330	0.8330	0.8330	0.9250	0.9250	0.9250	0.9230	0.9230	0.9230
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	84	144	155	197	133	56	38	458	63	185	567	268
Total Analysis Volume [veh/h]	338	576	619	786	532	223	150	1832	252	741	2267	1074
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	25	41	0	23	39	0	10	34	0	22	46	46
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	30	0	0	28	0	0	23	0	0	23	23
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	14	37	37	19	42	42	6	30	30	18	42	65
g / C, Green / Cycle	0.12	0.31	0.31	0.16	0.35	0.35	0.05	0.25	0.25	0.15	0.35	0.54
(v / s)_i Volume / Saturation Flow Rate	0.10	0.15	0.33	0.22	0.14	0.12	0.04	0.27	0.28	0.21	0.40	0.57
s, saturation flow rate [veh/h]	3500	3800	1900	3500	3800	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	407	1166	583	554	1326	663	176	1432	477	525	2001	1031
d1, Uniform Delay [s]	51.86	33.97	41.59	50.50	29.57	28.82	56.56	44.93	44.93	51.00	38.94	27.43
k, delay calibration	0.11	0.11	0.50	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.40	0.32	54.60	190.33	0.20	0.30	11.08	51.04	73.18	187.32	66.59	39.35
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.83	0.49	1.06	1.42	0.40	0.34	0.85	1.09	1.11	1.41	1.13	1.04
d, Delay for Lane Group [s/veh]	56.26	34.30	96.19	240.83	29.77	29.11	67.64	95.97	118.11	238.32	105.52	66.78
Lane Group LOS	E	C	F	F	C	C	E	F	F	F	F	F
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.22	6.91	25.84	22.95	5.85	4.80	2.53	20.85	23.79	21.53	31.63	39.19
50th-Percentile Queue Length [ft/ln]	130.49	172.72	646.06	573.67	146.25	120.09	63.14	521.37	594.76	538.26	790.81	979.79
95th-Percentile Queue Length [veh/ln]	8.97	11.22	35.55	35.58	9.82	8.40	4.55	29.76	33.73	33.50	44.38	51.17
95th-Percentile Queue Length [ft/ln]	224.16	280.48	888.64	889.56	245.41	209.95	113.65	744.11	843.22	837.44	1109.51	1279.30

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	56.26	34.30	96.19	240.83	29.77	29.11	67.64	99.30	118.11	238.32	105.52	66.78
Movement LOS	E	C	F	F	C	C	E	F	F	F	F	F
d_A, Approach Delay [s/veh]	64.13			137.33			99.30			119.44		
Approach LOS	E			F			F			F		
d_I, Intersection Delay [s/veh]	108.55											
Intersection LOS	F											
Intersection V/C	1.200											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.51	49.51	49.51	49.51
l_p,int, Pedestrian LOS Score for Intersection	3.034	3.073	3.411	3.694
Crosswalk LOS	C	C	C	D
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	617	583	500	700
d_b, Bicycle Delay [s]	28.71	30.11	33.75	25.35
l_b,int, Bicycle LOS Score for Intersection	2.824	2.831	2.481	3.805
Bicycle LOS	C	C	B	D

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

APPENDIX D-V

YEAR 2045 TRAFFIC CONDITIONS

Brea Mall Expansion, Brea

Vistro File: N:\...\4099 HCM Network.vistro
Report File: N:\...\AM 2045.pdf

Scenario 10 AM 2045
4/12/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State College Boulevard at Lambert Road	Signalized	HCM 6th Edition	NB Thru	0.893	39.9	D
2	SR-57 SB Ramps at Lambert Road	Signalized	HCM 6th Edition	WB Left	0.838	24.4	C
3	SR-57 NB Ramps at Lambert Road	Signalized	HCM 6th Edition	NB Left	0.884	22.1	C
4	Randolph Avenue at Birch Street	Signalized	HCM 6th Edition	WB Left	0.348	14.2	B
5	State College Boulevard at Birch Street	Signalized	HCM 6th Edition	EB Left	0.645	40.4	D
6	S Associated Road at Birch Street	Signalized	HCM 6th Edition	EB Left	0.779	26.8	C
7	Randolph Avenue at Madison Way	Signalized	HCM 6th Edition	SB Left	0.105	15.2	B
8	Randolph Avenue at Brea Mall	Signalized	HCM 6th Edition	EB Left	0.094	6.1	A
9	Brea Mall South at State College Boulevard	Signalized	HCM 6th Edition	WB Left	0.236	12.8	B
10	Harbor Boulevard at Imperial Highway	Signalized	HCM 6th Edition	NB Left	1.029	57.6	E
11	Puente Street at Imperial Highway	Signalized	HCM 6th Edition	SB Left	0.662	21.1	C
12	Brea Boulevard at Imperial Highway	Signalized	HCM 6th Edition	WB Left	0.943	46.8	D
13	Randolph Avenue at Imperial Highway	Signalized	HCM 6th Edition	WB Left	0.518	13.2	B
14	State College Boulevard at Imperial Highway	Signalized	HCM 6th Edition	SB Left	0.846	36.0	D
15	SR-57 SB Ramps at Imperial Highway	Signalized	HCM 6th Edition	SB Left	0.678	15.8	B
16	SR-57 NB Ramps at Imperial Highway	Signalized	HCM 6th Edition	NB Thru	0.678	25.0	C
17	Associated Road at Imperial Highway	Signalized	HCM 6th Edition	NB Left	0.839	33.1	C
18	Castlegate Lane/Placentia	Signalized	HCM 6th	EB Left	0.733	18.7	B

16	Avenue at Imperial Highway	Signalized	Edition	EB Left	0.733	18.7	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: State College Boulevard at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	39.9
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.893

Intersection Setup

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	194	247	228	1011	688	9	16	1594	238	534	2035	627
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	194	247	228	1011	688	9	16	1594	238	534	2035	627
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	62	57	253	172	2	4	399	60	134	509	157
Total Analysis Volume [veh/h]	194	247	228	1011	688	9	16	1594	238	534	2035	627
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	13	15	0	42	44	0	10	39	0	24	53	53
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	0	0	0	33	0	0	28	0	0	22	22
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	9	12	12	12	37	40	40	3	35	35	20	52	94
g / C, Green / Cycle	0.07	0.10	0.10	0.10	0.31	0.34	0.34	0.02	0.29	0.29	0.17	0.44	0.78
(v / s)_i Volume / Saturation Flow Rate	0.06	0.09	0.08	0.08	0.29	0.18	0.18	0.00	0.24	0.24	0.15	0.36	0.33
s, saturation flow rate [veh/h]	3500	1900	1900	1900	3500	1900	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	252	189	189	189	1083	641	641	76	1658	553	584	2486	1480
d1, Uniform Delay [s]	54.75	53.46	53.07	52.75	40.26	32.31	32.30	57.73	39.75	39.87	49.17	29.68	4.38
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.12	0.12	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.97	14.15	9.11	6.71	4.40	0.83	0.83	1.37	4.88	13.87	6.12	3.15	0.89
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77	0.90	0.83	0.78	0.93	0.54	0.54	0.21	0.83	0.83	0.91	0.82	0.42
d, Delay for Lane Group [s/veh]	59.72	67.61	62.18	59.46	44.66	33.14	33.12	59.10	44.63	53.74	55.28	32.83	5.27
Lane Group LOS	E	E	E	E	D	C	C	E	D	D	E	C	A
Critical Lane Group	No	Yes	No	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.06	5.83	5.14	4.68	14.98	8.36	8.34	0.25	13.23	14.77	8.34	17.48	4.54
50th-Percentile Queue Length [ft/ln]	76.41	145.6	128.5	116.9	374.52	209.05	208.52	6.34	330.68	369.15	208.52	437.12	113.54
95th-Percentile Queue Length [veh/ln]	5.50	9.79	8.86	8.23	21.33	13.10	13.08	0.46	19.19	21.07	13.08	24.34	8.04
95th-Percentile Queue Length [ft/ln]	137.5	244.6	221.5	205.6	533.21	327.61	326.92	11.41	479.79	526.70	326.92	608.56	200.91

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	59.72	65.93	60.33	44.66	33.13	33.12	59.10	45.90	53.74	55.28	32.83	5.27
Movement LOS	E	E	E	D	C	C	E	D	D	E	C	A
d_A, Approach Delay [s/veh]	62.25			39.96			47.03			31.18		
Approach LOS	E			D			D			C		
d_I, Intersection Delay [s/veh]	39.95											
Intersection LOS	D											
Intersection V/C	0.893											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.52	49.52	49.52	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.904	2.889	3.306	0.000
Crosswalk LOS	C	C	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	183	666	583	816
d_b, Bicycle Delay [s]	49.52	26.68	30.12	21.02
l_b,int, Bicycle LOS Score for Intersection	2.112	2.969	2.322	3.317
Bicycle LOS	B	C	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: SR-57 SB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	24.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.838

Intersection Setup

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	0	0	0	1084	0	725	0	1946	650	285	2284	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	1084	0	725	0	1946	650	285	2284	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	271	0	181	0	487	163	71	571	0
Total Analysis Volume [veh/h]	0	0	0	1084	0	725	0	1946	650	285	2284	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	7	0	0	0	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	6	0	0	0	6	0	6	6	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	44	0	0	0	38	0	13	51	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	12	0	0	20	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall				No				No		No	No	
Maximum Recall				No				No		No	No	
Pedestrian Recall				No				No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	R	C	R	L	C
C, Cycle Length [s]		95	95	95	95	95	95
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		34	34	40	40	9	53
g / C, Green / Cycle		0.36	0.36	0.42	0.42	0.10	0.56
(v / s)_i Volume / Saturation Flow Rate		0.31	0.19	0.34	0.17	0.08	0.40
s, saturation flow rate [veh/h]		3500	3800	5700	3800	3500	5700
c, Capacity [veh/h]		1262	1370	2381	1587	335	3166
d1, Uniform Delay [s]		28.15	24.02	24.46	19.43	42.31	15.67
k, delay calibration		0.11	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		1.83	0.32	3.25	0.78	6.13	1.46
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.86	0.53	0.82	0.41	0.85	0.72
d, Delay for Lane Group [s/veh]		29.98	24.34	27.72	20.22	48.44	17.13
Lane Group LOS		C	C	C	C	D	B
Critical Lane Group		Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]		11.31	6.33	13.00	5.06	3.54	11.67
50th-Percentile Queue Length [ft/ln]		282.77	158.28	325.02	126.56	88.55	291.72
95th-Percentile Queue Length [veh/ln]		16.83	10.46	18.91	8.75	6.38	17.27
95th-Percentile Queue Length [ft/ln]		420.67	261.44	472.86	218.81	159.39	431.77

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	29.98	0.00	24.34	0.00	27.72	20.22	48.44	17.13	0.00
Movement LOS				C		C		C	C	D	B	
d_A, Approach Delay [s/veh]	0.00			27.72			25.84			20.60		
Approach LOS	A			C			C			C		
d_I, Intersection Delay [s/veh]	24.40											
Intersection LOS	C											
Intersection V/C	0.838											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	37.14	37.14	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.173	2.574	0.000	0.000
Crosswalk LOS	B	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	842	716	989
d_b, Bicycle Delay [s]	47.51	15.93	19.59	12.13
l_b,int, Bicycle LOS Score for Intersection	4.132	1.560	2.987	2.973
Bicycle LOS	D	A	C	C

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 3: SR-57 NB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	22.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.884

Intersection Setup

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			No			No			No		

Volumes

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	1104	0	534	0	0	0	0	2603	419	0	1456	530
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1104	0	534	0	0	0	0	2603	419	0	1456	530
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	276	0	134	0	0	0	0	651	105	0	364	0
Total Analysis Volume [veh/h]	1104	0	534	0	0	0	0	2603	419	0	1456	0
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Permiss	Split	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna
Signal Group	3	0	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	0	0	0	0	0	0	6	0	0	6	0
Maximum Green [s]	30	0	0	0	0	0	0	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	59	0	0	0	0	0	0	36	0	0	36	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	25	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R		C	C	R	C
C, Cycle Length [s]	95	95		95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	35	35		51	51	51	51
g / C, Green / Cycle	0.37	0.37		0.54	0.54	0.54	0.54
(v / s)_i Volume / Saturation Flow Rate	0.32	0.28		0.46	0.46	0.22	0.26
s, saturation flow rate [veh/h]	3500	1900		3800	1900	1900	5700
c, Capacity [veh/h]	1306	709		2062	1031	1031	3093
d1, Uniform Delay [s]	27.24	25.93		18.27	18.27	12.74	13.33
k, delay calibration	0.11	0.11		0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.59	1.65		4.37	8.31	1.19	0.52
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.75		0.84	0.84	0.41	0.47
d, Delay for Lane Group [s/veh]	28.83	27.58		22.64	26.58	13.93	13.85
Lane Group LOS	C	C		C	C	B	B
Critical Lane Group	Yes	No		Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	11.29	10.46		15.92	17.05	5.28	6.14
50th-Percentile Queue Length [ft/ln]	282.19	261.41		398.11	426.31	131.99	153.42
95th-Percentile Queue Length [veh/ln]	16.80	15.76		22.47	23.82	9.05	10.20
95th-Percentile Queue Length [ft/ln]	419.93	393.99		561.72	595.62	226.20	254.99

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.83	0.00	27.58	0.00	0.00	0.00	0.00	23.53	13.93	0.00	13.85	0.00
Movement LOS	C		C					C	B		B	
d_A, Approach Delay [s/veh]	28.42			0.00			22.57			13.85		
Approach LOS	C			A			C			B		
d_I, Intersection Delay [s/veh]	22.06											
Intersection LOS	C											
Intersection V/C	0.884											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	37.11	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.703	0.000	0.000	0.000
Crosswalk LOS	B	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1159	0	674	674
d_b, Bicycle Delay [s]	8.40	47.47	20.87	20.87
l_b,int, Bicycle LOS Score for Intersection	1.560	4.132	3.222	2.360
Bicycle LOS	A	D	C	B

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 4: Randolph Avenue at Birch Street

Control Type:	Signalized	Delay (sec / veh):	14.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.348

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Base Volume Input [veh/h]	26	44	98	86	38	37	43	656	99	84	597	61
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	44	98	86	38	37	43	656	99	84	597	61
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	11	25	22	10	9	11	164	25	21	149	15
Total Analysis Volume [veh/h]	26	44	98	86	38	37	43	656	99	84	597	61
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	38	0	0	38	0	10	30	0	22	42	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	25	0	0	19	0	0	18	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	7	7	7	7	4	66	66	6	67	67
g / C, Green / Cycle	0.08	0.08	0.08	0.08	0.08	0.04	0.73	0.73	0.06	0.75	0.75
(v / s)_i Volume / Saturation Flow Rate	0.01	0.02	0.05	0.05	0.04	0.02	0.20	0.19	0.05	0.16	0.03
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1800	1900	1900	1800	3800	1900
c, Capacity [veh/h]	116	145	145	144	145	81	1385	1385	111	2833	1416
d1, Uniform Delay [s]	38.99	39.33	40.51	40.35	40.00	42.06	4.16	4.11	41.57	3.46	3.01
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.97	1.17	5.43	3.92	2.85	5.26	0.50	0.47	9.91	0.17	0.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.22	0.30	0.68	0.60	0.52	0.53	0.28	0.27	0.76	0.21	0.04
d, Delay for Lane Group [s/veh]	39.96	40.50	45.94	44.27	42.85	47.32	4.66	4.58	51.48	3.63	3.07
Lane Group LOS	D	D	D	D	D	D	A	A	D	A	A
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.56	0.96	2.31	1.98	1.69	1.04	2.07	1.96	2.12	1.29	0.24
50th-Percentile Queue Length [ft/ln]	14.12	23.95	57.71	49.59	42.35	26.10	51.77	48.93	53.01	32.28	6.01
95th-Percentile Queue Length [veh/ln]	1.02	1.72	4.15	3.57	3.05	1.88	3.73	3.52	3.82	2.32	0.43
95th-Percentile Queue Length [ft/ln]	25.42	43.11	103.87	89.26	76.23	46.99	93.19	88.07	95.41	58.10	10.82

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	39.96	40.50	45.94	44.27	42.85	42.85	47.32	4.63	4.58	51.48	3.63	3.07
Movement LOS	D	D	D	D	D	D	D	A	A	D	A	A
d_A, Approach Delay [s/veh]	43.59			43.61			6.92			9.00		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	14.20											
Intersection LOS	B											
Intersection V/C	0.348											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	34.68	34.68
l_p,int, Pedestrian LOS Score for Intersection	2.225	2.040	2.621	2.832
Crosswalk LOS	B	B	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	755	755	578	844
d_b, Bicycle Delay [s]	17.43	17.43	22.77	15.03
l_b,int, Bicycle LOS Score for Intersection	1.837	1.825	2.218	2.172
Bicycle LOS	A	A	B	B

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 5: State College Boulevard at Birch Street

Control Type:	Signalized	Delay (sec / veh):	40.4
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.645

Intersection Setup

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Base Volume Input [veh/h]	88	166	114	776	964	254	125	579	68	101	663	338
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	88	166	114	776	964	254	125	579	68	101	663	338
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	42	29	194	241	64	31	145	17	25	166	85
Total Analysis Volume [veh/h]	88	166	114	776	964	254	125	579	68	101	663	338
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	26	39	0	32	45	0	10	39	0	10	39	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	28	0	0	30	0	0	28	0	0	26	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	20	20	28	42	42	6	50	50	6	50	50
g / C, Green / Cycle	0.05	0.17	0.17	0.23	0.35	0.35	0.05	0.42	0.42	0.05	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate	0.03	0.04	0.06	0.22	0.32	0.32	0.04	0.15	0.04	0.03	0.17	0.18
s, saturation flow rate [veh/h]	3500	3800	1900	3500	1900	1900	3500	3800	1900	3500	3800	1900
c, Capacity [veh/h]	168	629	315	816	666	666	178	1592	796	172	1585	793
d1, Uniform Delay [s]	55.79	43.71	44.47	45.34	37.25	37.25	56.10	23.92	21.03	55.90	24.70	24.81
k, delay calibration	0.11	0.11	0.11	0.11	0.23	0.23	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.50	0.22	0.70	6.96	10.27	10.27	5.01	0.65	0.21	3.18	0.81	1.68
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.52	0.26	0.36	0.95	0.91	0.91	0.70	0.36	0.09	0.59	0.42	0.43
d, Delay for Lane Group [s/veh]	58.29	43.93	45.17	52.30	47.52	47.52	61.11	24.56	21.24	59.08	25.52	26.48
Lane Group LOS	E	D	D	D	D	D	E	C	C	E	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.36	2.19	3.09	12.10	18.72	18.72	1.99	5.77	1.21	1.58	6.81	7.16
50th-Percentile Queue Length [ft/ln]	34.03	54.63	77.19	302.39	467.99	467.99	49.72	144.17	30.20	39.38	170.37	179.08
95th-Percentile Queue Length [veh/ln]	2.45	3.93	5.56	17.80	25.82	25.82	3.58	9.71	2.17	2.84	11.10	11.55
95th-Percentile Queue Length [ft/ln]	61.26	98.33	138.93	444.98	645.38	645.38	89.50	242.63	54.36	70.89	277.40	288.81

Movement, Approach, & Intersection Results

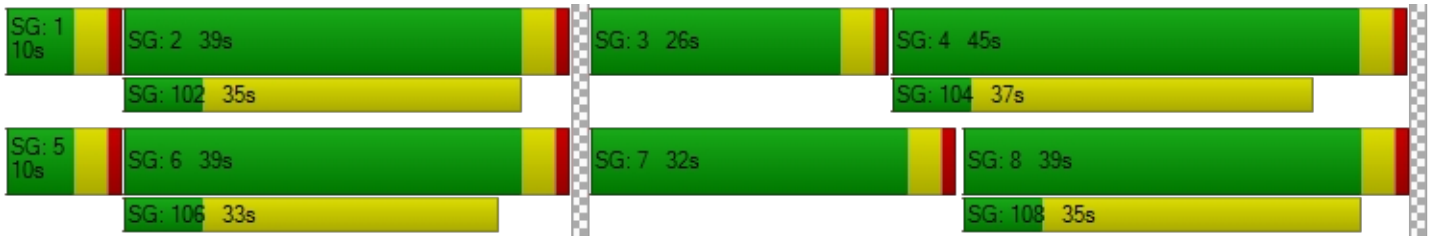
d_M, Delay for Movement [s/veh]	58.29	43.93	45.17	52.30	47.52	47.52	61.11	24.56	21.24	59.08	25.52	26.48
Movement LOS	E	D	D	D	D	D	E	C	C	E	C	C
d_A, Approach Delay [s/veh]	47.75			49.38			30.19			28.89		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	40.41											
Intersection LOS	D											
Intersection V/C	0.645											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.52	49.52	49.52	49.52
l_p,int, Pedestrian LOS Score for Intersection	2.817	2.893	2.855	2.966
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	583	683	583	583
d_b, Bicycle Delay [s]	30.12	26.02	30.12	30.12
l_b,int, Bicycle LOS Score for Intersection	1.863	3.205	2.197	2.469
Bicycle LOS	A	C	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: S Associated Road at Birch Street

Control Type:	Signalized	Delay (sec / veh):	26.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.779

Intersection Setup

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Base Volume Input [veh/h]	286	7	364	63	34	11	5	1098	374	405	894	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	286	7	364	63	34	11	5	1098	374	405	894	11
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	72	2	91	16	9	3	1	275	94	101	224	3
Total Analysis Volume [veh/h]	286	7	364	63	34	11	5	1098	374	405	894	11
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	8	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups			1,8									
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	6	0	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	30	0	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	23	60	60	0	37	0	10	38	0	22	50	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	26	26	0	26	0	0	27	0	0	26	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No		No		No	No		No	No	
Maximum Recall	No	No	No		No		No	No		No	No	
Pedestrian Recall	No	No	No		No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	22	44	6	6	1	68	68	18	85	85
g / C, Green / Cycle	0.10	0.19	0.37	0.05	0.05	0.01	0.56	0.56	0.15	0.71	0.71
(v / s)_i Volume / Saturation Flow Rate	0.08	0.00	0.19	0.04	0.02	0.00	0.40	0.37	0.12	0.24	0.24
s, saturation flow rate [veh/h]	3500	1900	1900	1800	1900	1800	1900	1900	3500	1900	1900
c, Capacity [veh/h]	353	353	701	120	98	15	1072	1072	525	1342	1342
d1, Uniform Delay [s]	52.82	39.94	29.54	55.96	55.31	59.20	19.00	18.23	49.03	6.81	6.80
k, delay calibration	0.11	0.11	0.28	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.43	0.02	1.54	3.55	3.35	13.08	3.97	3.25	2.44	0.68	0.68
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.81	0.02	0.52	0.53	0.46	0.34	0.71	0.66	0.77	0.34	0.34
d, Delay for Lane Group [s/veh]	57.26	39.96	31.08	59.51	58.66	72.29	22.97	21.48	51.46	7.49	7.48
Lane Group LOS	E	D	C	E	E	E	C	C	D	A	A
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.44	0.17	8.47	1.99	1.42	0.20	15.92	14.21	6.01	4.36	4.34
50th-Percentile Queue Length [ft/ln]	110.91	4.32	211.87	49.86	35.40	5.12	398.10	355.28	150.15	109.02	108.48
95th-Percentile Queue Length [veh/ln]	7.89	0.31	13.25	3.59	2.55	0.37	22.47	20.39	10.03	7.79	7.76
95th-Percentile Queue Length [ft/ln]	197.27	7.77	331.23	89.76	63.71	9.21	561.71	509.84	250.63	194.64	193.88

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	57.26	39.96	31.08	59.51	58.66	58.66	72.29	22.51	21.48	51.46	7.49	7.48
Movement LOS	E	D	C	E	E	E	E	C	C	D	A	A
d_A, Approach Delay [s/veh]	42.57			59.15			22.42			21.08		
Approach LOS	D			E			C			C		
d_I, Intersection Delay [s/veh]	26.77											
Intersection LOS	C											
Intersection V/C	0.779											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.51	49.51	49.51	49.51
l_p,int, Pedestrian LOS Score for Intersection	2.706	1.997	2.834	3.017
Crosswalk LOS	B	A	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	933	550	567	767
d_b, Bicycle Delay [s]	17.07	31.54	30.82	22.82
l_b,int, Bicycle LOS Score for Intersection	2.644	1.738	2.778	2.640
Bicycle LOS	B	A	C	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 7: Randolph Avenue at Madison Way

Control Type:	Signalized	Delay (sec / veh):	15.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.105

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Base Volume Input [veh/h]	28	146	9	6	137	18	36	3	62	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	28	146	9	6	137	18	36	3	62	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	37	2	2	34	5	9	1	16	0	0	0
Total Analysis Volume [veh/h]	28	146	9	6	137	18	36	3	62	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	6	6	0	6	6	0	0	6	0	0	6	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	17	46	0	10	39	0	0	34	0	0	34	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	15	0	0	12	0	0	19	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	72	72	1	69	69	6	6	6	6
g / C, Green / Cycle	0.03	0.79	0.79	0.01	0.77	0.77	0.06	0.06	0.06	0.06
(v / s)_i Volume / Saturation Flow Rate	0.02	0.04	0.04	0.00	0.04	0.04	0.02	0.03	0.00	0.00
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1900	1800	1900	1800	1900
c, Capacity [veh/h]	63	1508	1508	19	1462	1462	158	119	100	119
d1, Uniform Delay [s]	42.61	2.00	2.00	44.22	2.49	2.49	40.39	40.98	0.00	0.00
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.92	0.06	0.06	9.13	0.07	0.07	0.72	3.90	0.00	0.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.45	0.05	0.05	0.32	0.05	0.05	0.23	0.55	0.00	0.00
d, Delay for Lane Group [s/veh]	47.53	2.06	2.06	53.35	2.56	2.56	41.11	44.89	0.00	0.00
Lane Group LOS	D	A	A	D	A	A	D	D	A	A
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.69	0.21	0.21	0.18	0.26	0.26	0.79	1.51	0.00	0.00
50th-Percentile Queue Length [ft/ln]	17.26	5.23	5.19	4.50	6.50	6.42	19.69	37.83	0.00	0.00
95th-Percentile Queue Length [veh/ln]	1.24	0.38	0.37	0.32	0.47	0.46	1.42	2.72	0.00	0.00
95th-Percentile Queue Length [ft/ln]	31.07	9.41	9.35	8.10	11.70	11.55	35.44	68.10	0.00	0.00

Movement, Approach, & Intersection Results

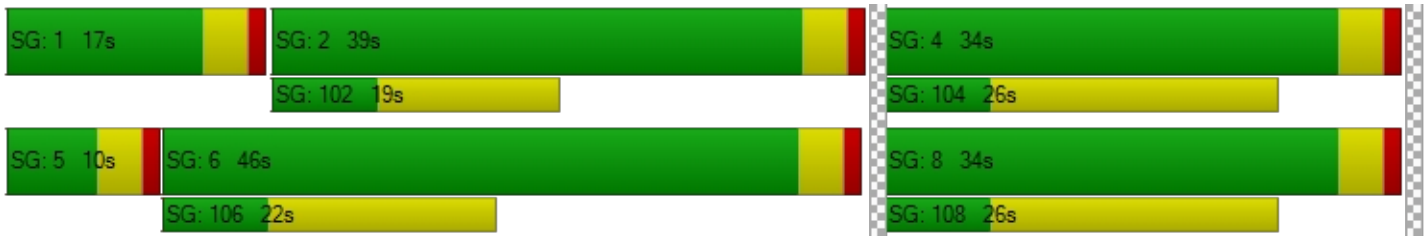
d_M, Delay for Movement [s/veh]	47.53	2.06	2.06	53.35	2.56	2.56	41.11	44.89	44.89	0.00	0.00	0.00
Movement LOS	D	A	A	D	A	A	D	D	D	A	A	A
d_A, Approach Delay [s/veh]	9.02			4.45			43.54			0.00		
Approach LOS	A			A			D			A		
d_I, Intersection Delay [s/veh]	15.20											
Intersection LOS	B											
Intersection V/C	0.105											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	34.68	34.68
l_p,int, Pedestrian LOS Score for Intersection	2.374	2.417	1.987	1.946
Crosswalk LOS	B	B	A	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	933	778	666	666
d_b, Bicycle Delay [s]	12.81	16.82	20.01	20.01
l_b,int, Bicycle LOS Score for Intersection	1.711	1.692	1.726	1.560
Bicycle LOS	A	A	A	A

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 8: Randolph Avenue at Brea Mall

Control Type:	Signalized	Delay (sec / veh):	6.1
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.094

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Base Volume Input [veh/h]	14	190	72	17	166	6	1	0	1	28	0	7
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	190	72	17	166	6	1	0	1	28	0	7
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	48	18	4	42	2	0	0	0	7	0	2
Total Analysis Volume [veh/h]	14	190	72	17	166	6	1	0	1	28	0	7
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	6	6	0	6	6	0	0	6	0	0	6	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	30	0	10	30	0	0	30	0	0	30	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	17	0	0	18	0	0	19	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	R	L	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	84	78	78	84	78	78	0	0	4	4
g / C, Green / Cycle	0.84	0.78	0.78	0.84	0.78	0.78	0.00	0.00	0.04	0.04
(v / s)_i Volume / Saturation Flow Rate	0.01	0.07	0.07	0.01	0.05	0.05	0.00	0.00	0.01	0.01
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1900	1800	1900	1800	1900
c, Capacity [veh/h]	1589	1473	1473	1576	1479	1479	7	7	68	72
d1, Uniform Delay [s]	1.32	2.72	2.71	1.32	2.57	2.57	49.68	49.68	46.77	46.74
k, delay calibration	0.11	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.00	0.12	0.12	0.01	0.08	0.07	9.31	8.30	1.96	1.72
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.01	0.09	0.09	0.01	0.06	0.06	0.14	0.14	0.26	0.24
d, Delay for Lane Group [s/veh]	1.32	2.84	2.83	1.33	2.65	2.65	58.99	57.98	48.73	48.46
Lane Group LOS	A	A	A	A	A	A	E	E	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.02	0.53	0.51	0.03	0.32	0.32	0.04	0.04	0.46	0.45
50th-Percentile Queue Length [ft/ln]	0.59	13.30	12.64	0.82	8.11	8.07	1.07	1.04	11.51	11.36
95th-Percentile Queue Length [veh/ln]	0.04	0.96	0.91	0.06	0.58	0.58	0.08	0.07	0.83	0.82
95th-Percentile Queue Length [ft/ln]	1.05	23.94	22.75	1.48	14.60	14.53	1.92	1.87	20.71	20.44

Movement, Approach, & Intersection Results

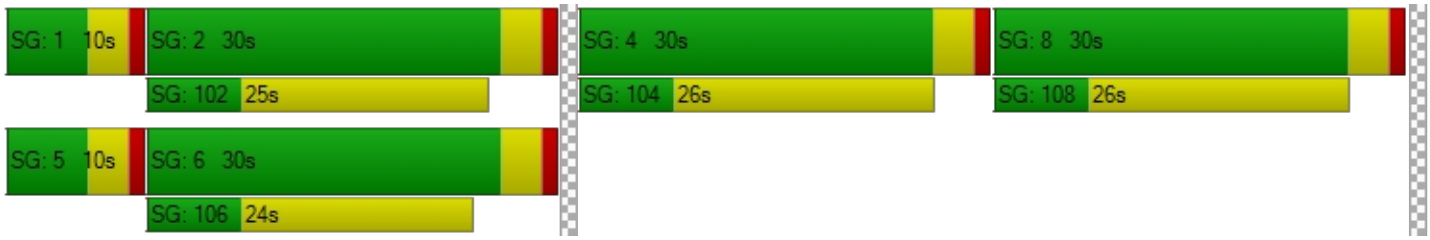
d_M, Delay for Movement [s/veh]	1.32	2.84	2.83	1.33	2.65	2.65	58.99	58.99	57.98	48.63	48.46	48.46
Movement LOS	A	A	A	A	A	A	E	E	E	D	D	D
d_A, Approach Delay [s/veh]	2.76			2.53			58.48			48.60		
Approach LOS	A			A			E			D		
d_I, Intersection Delay [s/veh]	6.09											
Intersection LOS	A											
Intersection V/C	0.094											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	39.62	39.62	39.62	39.62
l_p,int, Pedestrian LOS Score for Intersection	2.397	2.380	1.968	2.005
Crosswalk LOS	B	B	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	520	520	520	520
d_b, Bicycle Delay [s]	27.40	27.40	27.40	27.40
l_b,int, Bicycle LOS Score for Intersection	1.787	1.716	1.563	1.617
Bicycle LOS	A	A	A	A

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 9: Brea Mall South at State College Boulevard

Control Type:	Signalized	Delay (sec / veh):	12.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.236

Intersection Setup

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Base Volume Input [veh/h]	34	9	17	3	6	28	84	284	17	30	512	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	34	9	17	3	6	28	84	284	17	30	512	15
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	2	4	1	2	7	21	71	4	8	128	4
Total Analysis Volume [veh/h]	34	9	17	3	6	28	84	284	17	30	512	15
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	4	5	2	0	1	6	0
Auxiliary Signal Groups						4,5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	6	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	30	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	37	0	0	10	10	10	33	0	10	33	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	26	0	0	0	0	0	20	0	0	21	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No	No	No	No		No	No	
Maximum Recall		No			No	No	No	No		No	No	
Pedestrian Recall		No			No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	C	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	5	5	4	4	22	5	62	62	3	60	60
g / C, Green / Cycle	0.05	0.05	0.05	0.04	0.04	0.24	0.06	0.69	0.69	0.04	0.67	0.67
(v / s)_i Volume / Saturation Flow Rate	0.01	0.02	0.01	0.00	0.00	0.01	0.02	0.08	0.08	0.02	0.14	0.14
s, saturation flow rate [veh/h]	1800	1800	1900	1800	1900	1900	3500	1900	1900	1800	1900	1900
c, Capacity [veh/h]	142	164	101	75	79	462	209	1313	1313	66	1270	1270
d1, Uniform Delay [s]	40.69	41.15	40.80	41.52	41.51	26.22	40.85	4.67	4.66	42.56	5.77	5.76
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.24	0.56	0.78	0.35	0.28	0.05	1.25	0.18	0.18	4.84	0.37	0.37
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.08	0.19	0.17	0.06	0.05	0.06	0.40	0.12	0.11	0.46	0.21	0.21
d, Delay for Lane Group [s/veh]	40.93	41.71	41.58	41.87	41.79	26.27	42.10	4.85	4.84	47.40	6.14	6.13
Lane Group LOS	D	D	D	D	D	C	D	A	A	D	A	A
Critical Lane Group	No	Yes	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.25	0.69	0.38	0.11	0.10	0.46	0.93	0.85	0.84	0.74	1.78	1.77
50th-Percentile Queue Length [ft/ln]	6.25	17.35	9.48	2.67	2.43	11.61	23.13	21.36	21.07	18.42	44.61	44.18
95th-Percentile Queue Length [veh/ln]	0.45	1.25	0.68	0.19	0.17	0.84	1.67	1.54	1.52	1.33	3.21	3.18
95th-Percentile Queue Length [ft/ln]	11.26	31.23	17.06	4.81	4.37	20.91	41.64	38.45	37.93	33.15	80.30	79.53

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.41	41.71	41.58	41.87	41.81	26.27	42.10	4.84	4.84	47.40	6.13	6.13
Movement LOS	D	D	D	D	D	C	D	A	A	D	A	A
d_A, Approach Delay [s/veh]	41.52			30.06			12.97			8.36		
Approach LOS	D			C			B			A		
d_I, Intersection Delay [s/veh]	12.76											
Intersection LOS	B											
Intersection V/C	0.236											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.72	34.72	0.00	34.72
l_p,int, Pedestrian LOS Score for Intersection	2.321	2.328	0.000	2.467
Crosswalk LOS	B	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	733	133	644	644
d_b, Bicycle Delay [s]	18.09	39.24	20.71	20.71
l_b,int, Bicycle LOS Score for Intersection	1.659	1.590	1.877	2.019
Bicycle LOS	A	A	A	B

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 10: Harbor Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	57.6
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.029

Intersection Setup

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	387	773	293	179	1484	334	303	1469	759	424	1315	275
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	387	773	293	179	1484	334	303	1469	759	424	1315	275
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	97	193	73	45	371	84	76	367	190	106	329	69
Total Analysis Volume [veh/h]	387	773	293	179	1484	334	303	1469	759	424	1315	275
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	16	43	0	12	39	0	16	47	0	18	49	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	31	0	0	28	0	0	31	0	0	29	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	38	38	8	34	34	12	44	44	14	46	46
g / C, Green / Cycle	0.10	0.32	0.32	0.07	0.28	0.28	0.10	0.37	0.37	0.12	0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.11	0.14	0.15	0.05	0.26	0.18	0.09	0.39	0.40	0.12	0.23	0.14
s, saturation flow rate [veh/h]	3500	5700	1900	3500	5700	1900	3500	3800	1900	3500	5700	1900
c, Capacity [veh/h]	351	1807	602	234	1617	539	351	1390	695	409	2180	727
d1, Uniform Delay [s]	54.00	32.40	33.11	55.06	41.64	37.36	53.19	38.06	38.06	53.00	29.75	26.76
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.16	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	56.06	0.16	0.61	5.11	2.52	1.77	6.35	40.62	61.88	30.76	1.25	1.50
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.10	0.43	0.49	0.76	0.92	0.62	0.86	1.06	1.09	1.04	0.60	0.38
d, Delay for Lane Group [s/veh]	110.06	32.56	33.72	60.16	44.15	39.13	59.54	78.68	99.94	83.76	30.99	28.26
Lane Group LOS	F	C	C	E	D	D	E	F	F	F	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	8.02	5.95	6.98	2.83	14.40	8.76	4.81	27.88	31.98	7.90	10.35	6.00
50th-Percentile Queue Length [ft/ln]	200.51	148.67	174.55	70.72	360.02	219.06	120.17	696.95	799.59	197.51	258.71	150.01
95th-Percentile Queue Length [veh/ln]	13.14	9.95	11.32	5.09	20.62	13.62	8.40	37.98	43.86	12.69	15.62	10.02
95th-Percentile Queue Length [ft/ln]	328.40	248.66	282.88	127.29	515.61	340.42	210.06	949.56	1096.48	317.36	390.60	250.45

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	110.06	32.56	33.72	60.16	44.15	39.13	59.54	78.68	99.94	83.76	30.99	28.26
Movement LOS	F	C	C	E	D	D	E	E	F	F	C	C
d_A, Approach Delay [s/veh]	53.43			44.75			82.76			41.73		
Approach LOS	D			D			F			D		
d_I, Intersection Delay [s/veh]	57.60											
Intersection LOS	E											
Intersection V/C	1.029											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.51	49.51	49.51	49.51
l_p,int, Pedestrian LOS Score for Intersection	3.309	3.226	3.296	3.291
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	650	583	717	750
d_b, Bicycle Delay [s]	27.34	30.11	24.71	23.44
l_b,int, Bicycle LOS Score for Intersection	2.359	2.658	2.952	2.667
Bicycle LOS	B	B	C	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 11: Puente Street at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	21.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.662

Intersection Setup

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	64	124	166	295	121	263	246	1454	85	53	1559	193
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	64	124	166	295	121	263	246	1454	85	53	1559	193
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	31	42	74	30	66	62	364	21	13	390	48
Total Analysis Volume [veh/h]	64	124	166	295	121	263	246	1454	85	53	1559	193
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	39	0	0	39	0	17	30	0	21	34	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	23	0	0	17	0	0	23	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	18	18	18	18	18	13	56	56	4	47	47
g / C, Green / Cycle	0.20	0.20	0.20	0.20	0.20	0.20	0.14	0.62	0.62	0.05	0.53	0.53
(v / s)_i Volume / Saturation Flow Rate	0.04	0.07	0.09	0.16	0.03	0.14	0.14	0.27	0.27	0.03	0.27	0.10
s, saturation flow rate [veh/h]	1800	1900	1900	1800	3800	1900	1800	3800	1900	1800	5700	1900
c, Capacity [veh/h]	348	372	372	295	743	372	261	2360	1180	90	2999	1000
d1, Uniform Delay [s]	30.21	31.17	31.93	34.84	30.10	33.82	38.11	8.83	8.90	41.86	13.92	11.25
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.25	0.52	0.84	24.70	0.10	2.49	15.24	0.58	1.20	5.95	0.65	0.43
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.18	0.33	0.45	1.00	0.16	0.71	0.94	0.43	0.44	0.59	0.52	0.19
d, Delay for Lane Group [s/veh]	30.46	31.70	32.77	59.54	30.20	36.31	53.35	9.41	10.10	47.81	14.57	11.69
Lane Group LOS	C	C	C	F	C	D	D	A	B	D	B	B
Critical Lane Group	No	No	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.17	2.34	3.22	8.09	1.09	5.52	6.38	4.76	5.10	1.29	6.58	2.04
50th-Percentile Queue Length [ft/ln]	29.21	58.53	80.57	202.35	27.20	137.99	159.44	118.98	127.60	32.24	164.57	51.06
95th-Percentile Queue Length [veh/ln]	2.10	4.21	5.80	12.77	1.96	9.37	10.52	8.34	8.81	2.32	10.79	3.68
95th-Percentile Queue Length [ft/ln]	52.58	105.35	145.03	319.21	48.95	234.32	262.98	208.42	220.22	58.03	269.76	91.91

Movement, Approach, & Intersection Results

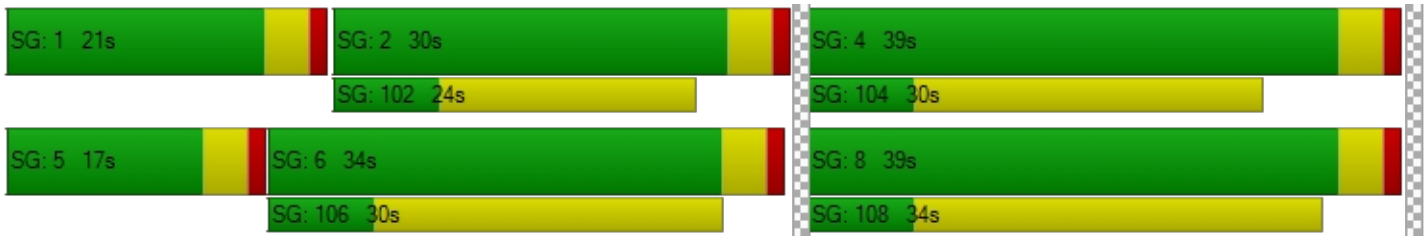
d_M, Delay for Movement [s/veh]	30.46	31.70	32.77	59.54	30.20	36.31	53.35	9.62	10.10	47.81	14.57	11.69
Movement LOS	C	C	C	F	C	D	D	A	B	D	B	B
d_A, Approach Delay [s/veh]	31.98			45.31			15.67			15.23		
Approach LOS	C			D			B			B		
d_I, Intersection Delay [s/veh]	21.10											
Intersection LOS	C											
Intersection V/C	0.662											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	34.68	34.68
l_p,int, Pedestrian LOS Score for Intersection	2.419	2.542	3.196	3.598
Crosswalk LOS	B	B	C	D
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	778	778	578	666
d_b, Bicycle Delay [s]	16.82	16.82	22.77	20.01
l_b,int, Bicycle LOS Score for Intersection	2.144	2.120	2.541	2.552
Bicycle LOS	B	B	B	B

Sequence

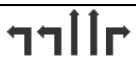
Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: Brea Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	46.8
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.943

Intersection Setup

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	473	581	189	181	1222	228	177	1689	395	210	1767	122
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	473	581	189	181	1222	228	177	1689	395	210	1767	122
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	118	145	47	45	306	57	44	422	99	53	442	31
Total Analysis Volume [veh/h]	473	581	189	181	1222	228	177	1689	395	210	1767	122
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	21	41	0	26	46	0	11	41	0	12	42	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	30	0	0	28	0	0	30	0	0	30	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	17	49	49	8	41	41	7	38	38	8	39	39
g / C, Green / Cycle	0.14	0.41	0.41	0.07	0.34	0.34	0.06	0.32	0.32	0.07	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.14	0.10	0.10	0.05	0.32	0.12	0.05	0.30	0.21	0.06	0.31	0.06
s, saturation flow rate [veh/h]	3500	5700	1900	3500	3800	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	496	2345	782	247	1293	646	205	1810	603	235	1858	619
d1, Uniform Delay [s]	51.10	23.15	23.09	54.66	38.51	29.69	56.01	39.72	35.28	55.58	39.52	29.14
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.56	0.05	0.16	4.14	4.40	0.33	10.14	10.31	5.46	11.43	12.15	0.71
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.95	0.25	0.24	0.73	0.95	0.35	0.86	0.93	0.65	0.90	0.95	0.20
d, Delay for Lane Group [s/veh]	61.66	23.21	23.25	58.80	42.90	30.01	66.15	50.03	40.74	67.00	51.67	29.85
Lane Group LOS	E	C	C	E	D	C	E	D	D	E	D	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	7.76	3.62	3.54	2.82	17.98	5.01	2.95	17.63	10.83	3.52	18.82	2.68
50th-Percentile Queue Length [ft/ln]	194.09	90.43	88.58	70.61	449.62	125.14	73.65	440.76	270.66	88.12	470.47	66.93
95th-Percentile Queue Length [veh/ln]	12.33	6.51	6.38	5.08	24.94	8.67	5.30	24.52	16.22	6.34	25.93	4.82
95th-Percentile Queue Length [ft/ln]	308.32	162.77	159.45	127.09	623.50	216.87	132.58	612.91	405.57	158.62	648.33	120.48

Movement, Approach, & Intersection Results

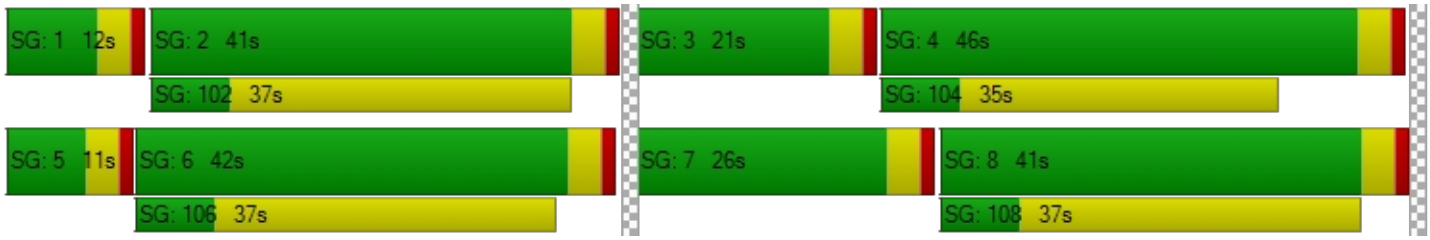
d_M, Delay for Movement [s/veh]	61.66	23.21	23.25	58.80	42.90	30.01	66.15	50.03	40.74	67.00	51.67	29.85
Movement LOS	E	C	C	E	D	C	E	D	D	E	D	C
d_A, Approach Delay [s/veh]	37.85			42.87			49.67			51.94		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	46.76											
Intersection LOS	D											
Intersection V/C	0.943											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.51	49.51	49.51	49.51
l_p,int, Pedestrian LOS Score for Intersection	3.113	3.045	3.375	3.313
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	617	700	617	633
d_b, Bicycle Delay [s]	28.71	25.36	28.71	28.02
l_b,int, Bicycle LOS Score for Intersection	2.243	2.905	2.803	2.714
Bicycle LOS	B	C	C	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 13: Randolph Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	13.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.518

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	39	20	71	140	22	41	96	1742	27	43	1882	164
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	39	20	71	140	22	41	96	1742	27	43	1882	164
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	5	18	35	6	10	24	436	7	11	471	41
Total Analysis Volume [veh/h]	39	20	71	140	22	41	96	1742	27	43	1882	164
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	10	0	0	40	0	10	40	0	10	40	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	29	0	0	28	0	0	29	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	6	6	6	6	6	67	67	4	66	66
g / C, Green / Cycle	0.06	0.06	0.06	0.06	0.06	0.06	0.67	0.67	0.04	0.66	0.66
(v / s)_i Volume / Saturation Flow Rate	0.02	0.01	0.04	0.04	0.03	0.03	0.31	0.32	0.02	0.33	0.09
s, saturation flow rate [veh/h]	1800	1800	1900	3500	1900	3500	3800	1900	1800	5700	1900
c, Capacity [veh/h]	107	107	113	228	124	199	2557	1278	77	3757	1252
d1, Uniform Delay [s]	45.29	44.81	46.03	45.59	45.27	45.80	7.72	7.87	46.98	8.69	6.37
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.08	0.84	5.68	2.69	3.23	1.81	0.59	1.26	6.10	0.48	0.22
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.37	0.19	0.63	0.61	0.51	0.48	0.45	0.47	0.56	0.50	0.13
d, Delay for Lane Group [s/veh]	47.37	45.64	51.71	48.28	48.49	47.61	8.31	9.13	53.08	9.17	6.59
Lane Group LOS	D	D	D	D	D	D	A	A	D	A	A
Critical Lane Group	No	No	Yes	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.99	0.50	1.89	1.77	1.62	1.20	5.38	5.94	1.18	6.31	1.25
50th-Percentile Queue Length [ft/ln]	24.74	12.39	47.37	44.27	40.43	30.06	134.42	148.56	29.42	157.70	31.31
95th-Percentile Queue Length [veh/ln]	1.78	0.89	3.41	3.19	2.91	2.16	9.18	9.94	2.12	10.43	2.25
95th-Percentile Queue Length [ft/ln]	44.53	22.30	85.26	79.68	72.77	54.10	229.49	248.51	52.95	260.67	56.35

Movement, Approach, & Intersection Results

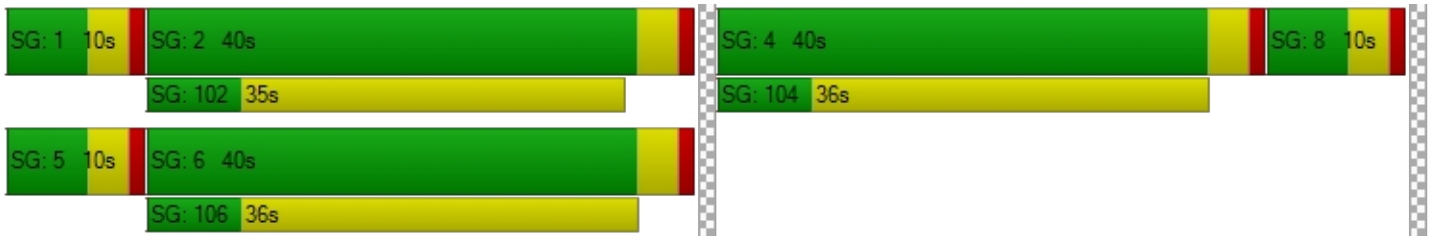
d_M, Delay for Movement [s/veh]	47.37	45.64	51.71	48.28	48.49	48.49	47.61	8.58	9.13	53.08	9.17	6.59
Movement LOS	D	D	D	D	D	D	D	A	A	D	A	A
d_A, Approach Delay [s/veh]	49.48			48.35			10.60			9.87		
Approach LOS	D			D			B			A		
d_I, Intersection Delay [s/veh]	13.21											
Intersection LOS	B											
Intersection V/C	0.518											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	39.64	39.64	39.64	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.190	2.399	3.197	0.000
Crosswalk LOS	B	B	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	120	719	719	719
d_b, Bicycle Delay [s]	44.22	20.51	20.51	20.51
l_b,int, Bicycle LOS Score for Intersection	1.667	1.895	2.585	2.709
Bicycle LOS	A	A	B	B

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 14: State College Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	36.0
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.846

Intersection Setup

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	121	168	479	127	487	33	37	1734	204	534	1939	153
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	121	168	479	127	487	33	37	1734	204	534	1939	153
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	30	42	120	32	122	8	9	434	51	134	485	38
Total Analysis Volume [veh/h]	121	168	479	127	487	33	37	1734	204	534	1939	153
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	14	45	0	12	43	0	10	34	0	24	48	48
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	30	0	0	28	0	0	23	0	0	23	23
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	115	115	115	115	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	6	32	32	8	34	34	4	40	40	19	55	67
g / C, Green / Cycle	0.05	0.27	0.27	0.07	0.29	0.29	0.04	0.35	0.35	0.17	0.48	0.58
(v / s)_i Volume / Saturation Flow Rate	0.03	0.04	0.25	0.06	0.14	0.14	0.01	0.25	0.26	0.15	0.34	0.08
s, saturation flow rate [veh/h]	3500	3800	1900	2000	1900	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	182	1044	522	141	557	557	130	1978	659	592	2730	1109
d1, Uniform Delay [s]	53.58	31.67	40.48	53.11	33.37	33.26	53.92	32.86	33.16	46.88	23.68	10.83
k, delay calibration	0.11	0.11	0.25	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.16	0.07	13.85	18.28	0.62	0.60	1.19	2.41	7.65	5.42	1.60	0.26
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.67	0.16	0.92	0.90	0.47	0.46	0.28	0.73	0.75	0.90	0.71	0.14
d, Delay for Lane Group [s/veh]	57.74	31.74	54.33	71.39	33.99	33.86	55.11	35.27	40.81	52.30	25.28	11.09
Lane Group LOS	E	C	D	E	C	C	E	D	D	D	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.82	1.79	15.00	2.18	6.10	5.96	0.54	12.03	13.40	7.91	13.87	1.81
50th-Percentile Queue Length [ft/ln]	45.59	44.84	375.10	54.41	152.48	148.98	13.58	300.63	334.98	197.63	346.72	45.27
95th-Percentile Queue Length [veh/ln]	3.28	3.23	21.36	3.92	10.15	9.96	0.98	17.71	19.40	12.52	19.98	3.26
95th-Percentile Queue Length [ft/ln]	82.07	80.71	533.92	97.94	253.74	249.06	24.44	442.81	485.06	312.90	499.41	81.48

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	57.74	31.74	54.33	71.39	33.93	33.86	55.11	36.20	40.81	52.30	25.28	11.09
Movement LOS	E	C	D	E	C	C	E	D	D	D	C	B
d_A, Approach Delay [s/veh]	49.93			41.28			37.03			29.95		
Approach LOS	D			D			D			C		
d_I, Intersection Delay [s/veh]	36.04											
Intersection LOS	D											
Intersection V/C	0.846											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	47.05	47.05	47.05	47.05
l_p,int, Pedestrian LOS Score for Intersection	2.883	2.628	3.302	3.462
Crosswalk LOS	C	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	713	678	522	765
d_b, Bicycle Delay [s]	23.83	25.13	31.43	21.93
l_b,int, Bicycle LOS Score for Intersection	2.193	2.093	2.374	3.004
Bicycle LOS	B	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 15: SR-57 SB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	15.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.678

Intersection Setup

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	0	0	0	684	0	562	0	1697	805	0	2168	232
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	684	0	562	0	1697	805	0	2168	232
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	171	0	141	0	424	201	0	542	58
Total Analysis Volume [veh/h]	0	0	0	684	0	562	0	1697	805	0	2168	232
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	7	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	6	0	0	0	6	0	0	6	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	64	0	0	0	26	0	0	26	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	15	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	C
C, Cycle Length [s]		90	90	90	90	90
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		26	26	26	56	56
g / C, Green / Cycle		0.29	0.29	0.29	0.63	0.63
(v / s)_i Volume / Saturation Flow Rate		0.24	0.24	0.22	0.30	0.38
s, saturation flow rate [veh/h]		1750	1750	1900	5700	5700
c, Capacity [veh/h]		498	498	541	3570	3570
d1, Uniform Delay [s]		30.14	30.14	29.41	8.93	10.12
k, delay calibration		0.11	0.11	0.11	0.50	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		3.73	3.73	2.33	0.46	0.78
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.83	0.83	0.77	0.48	0.61
d, Delay for Lane Group [s/veh]		33.87	33.87	31.74	9.39	10.90
Lane Group LOS		C	C	C	A	B
Critical Lane Group		Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]		8.67	8.67	8.31	5.36	7.79
50th-Percentile Queue Length [ft/ln]		216.69	216.69	207.64	133.89	194.82
95th-Percentile Queue Length [veh/ln]		13.50	13.50	13.03	9.15	12.37
95th-Percentile Queue Length [ft/ln]		337.39	337.39	325.80	228.78	309.28

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	33.87	0.00	32.30	0.00	9.39	0.00	0.00	10.90	0.00
Movement LOS				C		C		A			B	
d_A, Approach Delay [s/veh]	0.00			33.16			9.39			10.90		
Approach LOS	A			C			A			B		
d_I, Intersection Delay [s/veh]	15.82											
Intersection LOS	B											
Intersection V/C	0.678											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	34.63	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	2.434	0.000	0.000
Crosswalk LOS	F	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1335	489	489
d_b, Bicycle Delay [s]	44.96	4.98	25.65	25.65
l_b,int, Bicycle LOS Score for Intersection	4.132	3.616	2.493	2.752
Bicycle LOS	D	D	B	C

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 16: SR-57 NB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	25.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.678

Intersection Setup

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	1125	31	949	0	0	86	98	1521	627	0	1721	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1125	31	949	0	0	86	98	1521	627	0	1721	14
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	281	8	237	0	0	22	25	380	157	0	430	4
Total Analysis Volume [veh/h]	1125	31	949	0	0	86	98	1521	627	0	1721	14
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Overlap	Protecte	Permiss	Unsigna	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	0	5	5	2	0	0	6	0
Auxiliary Signal Groups						5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	6	0	0	0	6	6	6	0	0	6	0
Maximum Green [s]	0	30	0	0	0	30	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	1.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	33	0	0	0	10	10	57	0	0	47	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	22	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No				No		No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No				No	No	No			No	
Maximum Recall		No				No	No	No			No	
Pedestrian Recall		No				No	No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	R	L	C	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	29	29	29	6	6	53	43	43
g / C, Green / Cycle	0.32	0.32	0.32	0.07	0.07	0.59	0.48	0.48
(v / s)_i Volume / Saturation Flow Rate	0.30	0.31	0.28	0.02	0.05	0.27	0.23	0.23
s, saturation flow rate [veh/h]	3500	1750	1900	3800	1800	5700	5700	1900
c, Capacity [veh/h]	1126	563	611	261	124	3360	2715	905
d1, Uniform Delay [s]	29.44	29.82	28.82	39.98	41.32	10.36	16.01	16.01
k, delay calibration	0.11	0.39	0.34	0.11	0.11	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.64	22.98	11.39	0.73	10.79	0.44	0.61	1.82
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.92	0.95	0.87	0.33	0.79	0.45	0.48	0.48
d, Delay for Lane Group [s/veh]	33.09	52.80	40.21	40.71	52.11	10.80	16.62	17.82
Lane Group LOS	C	D	D	D	D	B	B	B
Critical Lane Group	No	Yes	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	10.94	14.41	12.39	0.93	2.49	5.25	5.88	6.18
50th-Percentile Queue Length [ft/ln]	273.59	360.35	309.79	23.14	62.21	131.16	147.03	154.62
95th-Percentile Queue Length [veh/ln]	16.37	20.64	18.16	1.67	4.48	9.00	9.86	10.26
95th-Percentile Queue Length [ft/ln]	409.22	516.00	454.11	41.65	111.98	225.07	246.46	256.58

Movement, Approach, & Intersection Results

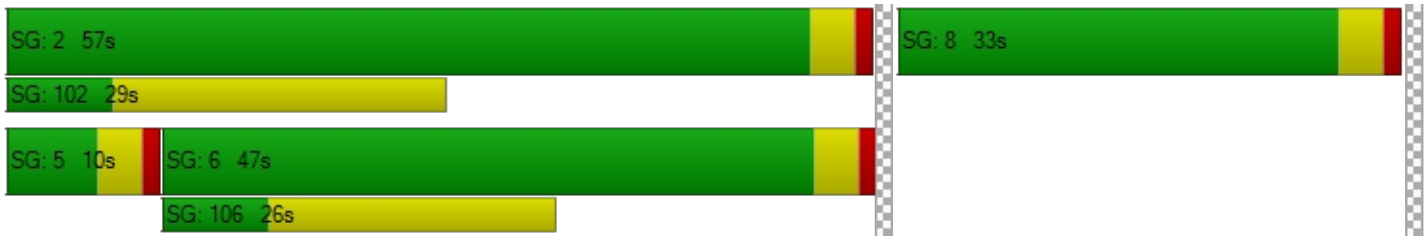
d_M, Delay for Movement [s/veh]	34.39	52.80	45.82	0.00	0.00	40.71	52.11	10.80	0.00	0.00	16.91	17.82
Movement LOS	C	D	D			D	D	B			B	B
d_A, Approach Delay [s/veh]	39.89			40.71			13.30			16.92		
Approach LOS	D			D			B			B		
d_I, Intersection Delay [s/veh]	24.95											
Intersection LOS	C											
Intersection V/C	0.678											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.70	34.70	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.710	2.014	0.000	0.000
Crosswalk LOS	B	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	644	133	1177	955
d_b, Bicycle Delay [s]	20.69	39.22	7.62	12.29
l_b,int, Bicycle LOS Score for Intersection	5.033	1.560	2.450	2.275
Bicycle LOS	F	A	B	B

Sequence

Ring 1	-	2	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 17: Associated Road at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	33.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.839

Intersection Setup

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	168	241	94	190	382	183	237	2167	113	104	1792	112
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	168	241	94	190	382	183	237	2167	113	104	1792	112
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	42	60	24	48	96	46	59	542	28	26	448	28
Total Analysis Volume [veh/h]	168	241	94	190	382	183	237	2167	113	104	1792	112
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	10	39	0	14	43	0	21	45	0	12	36	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	28	0	0	29	0	0	26	0	0	25	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	23	23	8	25	25	16	55	55	8	47	47
g / C, Green / Cycle	0.05	0.21	0.21	0.07	0.23	0.23	0.15	0.50	0.50	0.07	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.05	0.09	0.08	0.05	0.20	0.10	0.13	0.40	0.41	0.06	0.25	0.26
s, saturation flow rate [veh/h]	3500	1900	1900	3500	1900	1900	1800	3800	1900	1800	5700	1900
c, Capacity [veh/h]	194	395	395	255	428	428	267	1905	952	131	2426	809
d1, Uniform Delay [s]	51.60	38.03	37.75	50.03	41.35	36.55	45.98	22.64	23.21	50.23	24.12	24.60
k, delay calibration	0.11	0.11	0.11	0.11	0.14	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.07	0.77	0.68	4.28	8.38	0.68	9.64	3.40	7.76	10.30	1.02	3.48
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.87	0.44	0.41	0.74	0.89	0.43	0.89	0.79	0.82	0.79	0.58	0.61
d, Delay for Lane Group [s/veh]	62.67	38.80	38.43	54.31	49.72	37.23	55.62	26.04	30.97	60.53	25.14	28.07
Lane Group LOS	E	D	D	D	D	D	E	C	C	E	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.59	4.17	3.83	2.71	10.94	4.29	7.04	16.20	18.34	3.19	9.35	10.64
50th-Percentile Queue Length [ft/ln]	64.81	104.22	95.80	67.75	273.56	107.32	175.90	405.04	458.40	79.66	233.82	265.92
95th-Percentile Queue Length [veh/ln]	4.67	7.50	6.90	4.88	16.37	7.69	11.39	22.80	25.36	5.74	14.37	15.99
95th-Percentile Queue Length [ft/ln]	116.66	187.59	172.43	121.95	409.19	192.27	284.65	570.07	633.96	143.39	359.21	399.64

Movement, Approach, & Intersection Results

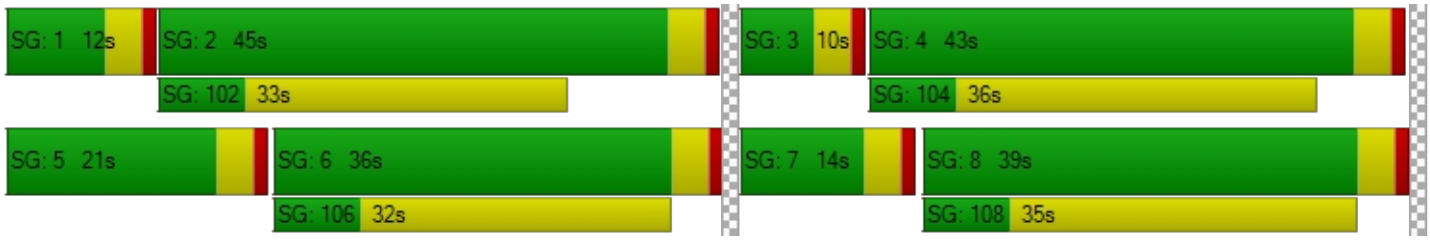
d_M, Delay for Movement [s/veh]	62.67	38.70	38.43	54.31	49.72	37.23	55.62	27.55	30.97	60.53	25.77	28.07
Movement LOS	E	D	D	D	D	D	E	C	C	E	C	C
d_A, Approach Delay [s/veh]	46.66			47.85			30.35			27.70		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	33.13											
Intersection LOS	C											
Intersection V/C	0.839											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	44.58	44.58	44.58	44.58
l_p,int, Pedestrian LOS Score for Intersection	2.524	2.681	3.303	3.278
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	636	709	745	582
d_b, Bicycle Delay [s]	25.59	22.94	21.66	27.68
l_b,int, Bicycle LOS Score for Intersection	1.975	2.805	2.944	2.388
Bicycle LOS	A	C	C	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 18: Castlegate Lane/Placentia Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	18.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.733

Intersection Setup

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	191	14	167	28	33	16	14	2152	478	201	1740	37
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	191	14	167	28	33	16	14	2152	478	201	1740	37
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	48	4	42	7	8	4	4	538	120	50	435	9
Total Analysis Volume [veh/h]	191	14	167	28	33	16	14	2152	478	201	1740	37
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	26	0	0	10	0	10	32	0	22	44	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	15	0	0	0	0	0	21	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	10	10	10	5	5	2	46	46	12	57	57
g / C, Green / Cycle	0.12	0.12	0.12	0.06	0.06	0.02	0.51	0.51	0.13	0.63	0.63
(v / s)_i Volume / Saturation Flow Rate	0.06	0.06	0.09	0.02	0.03	0.01	0.38	0.25	0.11	0.31	0.32
s, saturation flow rate [veh/h]	1750	1750	1900	1800	1900	1800	5700	1900	1800	3800	1900
c, Capacity [veh/h]	204	204	222	105	110	38	2927	976	241	2381	1190
d1, Uniform Delay [s]	37.35	37.37	38.56	40.63	41.06	43.55	17.15	14.26	38.05	9.08	9.25
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.89	1.91	5.10	1.35	2.77	5.86	1.68	1.76	7.30	0.73	1.57
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.50	0.50	0.75	0.27	0.44	0.37	0.74	0.49	0.83	0.49	0.51
d, Delay for Lane Group [s/veh]	39.24	39.28	43.66	41.98	43.83	49.41	18.83	16.02	45.35	9.81	10.82
Lane Group LOS	D	D	D	D	D	D	B	B	D	A	B
Critical Lane Group	No	No	Yes	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.19	2.21	3.83	0.63	1.13	0.37	11.12	6.39	4.74	5.66	6.27
50th-Percentile Queue Length [ft/ln]	54.84	55.21	95.86	15.70	28.16	9.18	278.11	159.72	118.58	141.60	156.67
95th-Percentile Queue Length [veh/ln]	3.95	3.98	6.90	1.13	2.03	0.66	16.59	10.53	8.31	9.57	10.37
95th-Percentile Queue Length [ft/ln]	98.71	99.39	172.54	28.26	50.68	16.52	414.86	263.36	207.87	239.18	259.30

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	39.26	39.28	43.66	41.98	43.83	43.83	49.41	18.83	16.02	45.35	10.14	10.82
Movement LOS	D	D	D	D	D	D	D	B	B	D	B	B
d_A, Approach Delay [s/veh]	41.23			43.16			18.48			13.73		
Approach LOS	D			D			B			B		
d_I, Intersection Delay [s/veh]	18.67											
Intersection LOS	B											
Intersection V/C	0.733											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.72	34.72	0.00	34.72
l_p,int, Pedestrian LOS Score for Intersection	2.395	1.986	0.000	3.196
Crosswalk LOS	B	A	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	488	133	622	888
d_b, Bicycle Delay [s]	25.73	39.24	21.40	13.92
l_b,int, Bicycle LOS Score for Intersection	2.173	1.687	3.014	2.648
Bicycle LOS	B	A	C	B

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Brea Mall Expansion, Brea

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Report File: N:\...\PM 2045.pdf

Scenario 11 PM 2045
4/12/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State College Boulevard at Lambert Road	Signalized	HCM 6th Edition	NB Left	0.878	41.9	D
2	SR-57 SB Ramps at Lambert Road	Signalized	HCM 6th Edition	WB Left	0.667	19.3	B
3	SR-57 NB Ramps at Lambert Road	Signalized	HCM 6th Edition	NB Left	0.574	13.6	B
4	Randolph Avenue at Birch Street	Signalized	HCM 6th Edition	NB Left	0.541	21.8	C
5	State College Boulevard at Birch Street	Signalized	HCM 6th Edition	NB Left	0.870	37.7	D
6	S Associated Road at Birch Street	Signalized	HCM 6th Edition	EB Left	0.760	28.9	C
7	Randolph Avenue at Madison Way	Signalized	HCM 6th Edition	WB Left	0.194	16.5	B
8	Randolph Avenue at Brea Mall	Signalized	HCM 6th Edition	EB Left	0.350	17.4	B
9	Brea Mall South at State College Boulevard	Signalized	HCM 6th Edition	WB Left	0.603	27.8	C
10	Harbor Boulevard at Imperial Highway	Signalized	HCM 6th Edition	WB Left	1.041	69.8	E
11	Puente Street at Imperial Highway	Signalized	HCM 6th Edition	WB Left	0.634	16.6	B
12	Brea Boulevard at Imperial Highway	Signalized	HCM 6th Edition	NB Left	0.878	41.4	D
13	Randolph Avenue at Imperial Highway	Signalized	HCM 6th Edition	WB Left	0.736	24.6	C
14	State College Boulevard at Imperial Highway	Signalized	HCM 6th Edition	WB Left	1.067	69.4	E
15	SR-57 SB Ramps at Imperial Highway	Signalized	HCM 6th Edition	SB Left	0.795	17.7	B
16	SR-57 NB Ramps at Imperial Highway	Signalized	HCM 6th Edition	EB Left	0.806	26.1	C
17	Associated Road at Imperial Highway	Signalized	HCM 6th Edition	WB Left	0.939	46.6	D
18	Castlegate Lane/Placentia	Signalized	HCM 6th	EB Left	0.845	28.1	C

16	Avenue at Imperial Highway	Signalized	Edition	EB Left	0.845	28.1	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: State College Boulevard at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	41.9
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.878

Intersection Setup

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	368	685	345	637	455	17	44	1694	302	443	1361	801
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	368	685	345	637	455	17	44	1694	302	443	1361	801
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	92	171	86	159	114	4	11	424	76	111	340	200
Total Analysis Volume [veh/h]	368	685	345	637	455	17	44	1694	302	443	1361	801
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	17	34	0	27	44	0	10	39	0	20	49	49
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	0	0	0	33	0	0	28	0	0	22	22
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	13	26	26	26	23	36	36	5	39	39	16	51	78
g / C, Green / Cycle	0.11	0.21	0.21	0.21	0.19	0.30	0.30	0.04	0.33	0.33	0.13	0.42	0.65
(v / s)_i Volume / Saturation Flow Rate	0.11	0.19	0.19	0.17	0.18	0.12	0.12	0.01	0.26	0.26	0.13	0.24	0.42
s, saturation flow rate [veh/h]	3500	1900	1900	1900	3500	1900	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	381	407	407	407	671	565	565	138	1864	621	468	2402	1228
d1, Uniform Delay [s]	53.28	45.72	45.60	44.43	47.94	33.89	33.83	56.11	36.89	36.82	51.58	26.40	12.97
k, delay calibration	0.11	0.27	0.27	0.20	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	14.78	14.41	13.18	5.81	7.99	0.50	0.49	1.32	3.80	10.39	10.30	0.97	2.70
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.97	0.88	0.87	0.77	0.95	0.42	0.42	0.32	0.80	0.80	0.95	0.57	0.65
d, Delay for Lane Group [s/veh]	68.06	60.13	58.78	50.24	55.93	34.39	34.32	57.43	40.69	47.22	61.88	27.38	15.67
Lane Group LOS	E	E	E	D	E	C	C	E	D	D	E	C	B
Critical Lane Group	No	Yes	No	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	6.30	11.98	11.69	9.45	10.11	5.65	5.57	0.67	13.91	14.95	7.26	9.99	13.23
50th-Percentile Queue Length [ft/ln]	157.5	299.4	292.1	236.3	252.87	141.35	139.34	16.87	347.65	373.81	181.62	249.63	330.70
95th-Percentile Queue Length [veh/ln]	10.42	17.65	17.29	14.50	15.33	9.55	9.45	1.21	20.02	21.29	11.68	15.17	19.19
95th-Percentile Queue Length [ft/ln]	260.4	441.3	432.3	362.4	383.27	238.84	236.13	30.37	500.55	532.35	292.12	379.18	479.81

Movement, Approach, & Intersection Results

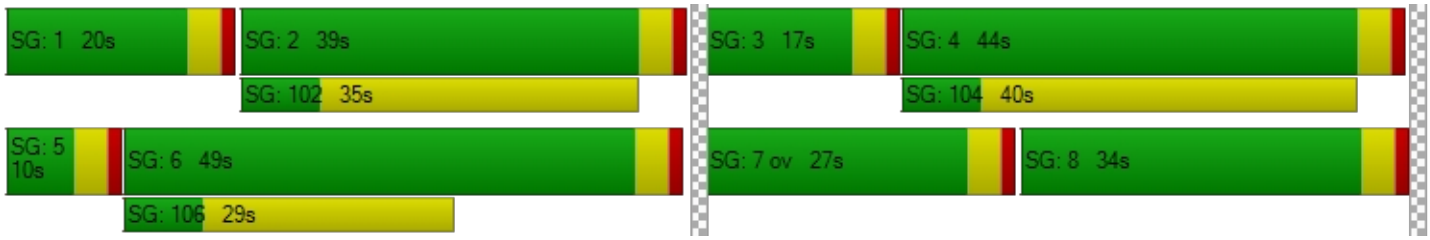
d_M, Delay for Movement [s/veh]	68.06	59.49	50.28	55.93	34.35	34.32	57.43	41.44	47.22	61.88	27.38	15.67
Movement LOS	E	E	D	E	C	C	E	D	D	E	C	B
d_A, Approach Delay [s/veh]	59.65			46.74			42.64			29.64		
Approach LOS	E			D			D			C		
d_I, Intersection Delay [s/veh]	41.87											
Intersection LOS	D											
Intersection V/C	0.878											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.52	49.52	49.52	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.970	2.895	3.273	0.000
Crosswalk LOS	C	C	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	500	666	583	750
d_b, Bicycle Delay [s]	33.76	26.68	30.12	23.45
l_b,int, Bicycle LOS Score for Intersection	2.713	2.475	2.401	2.992
Bicycle LOS	B	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: SR-57 SB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	19.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.667

Intersection Setup

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	0	0	0	497	0	888	0	1508	877	280	1832	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	497	0	888	0	1508	877	280	1832	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	124	0	222	0	377	219	70	458	0
Total Analysis Volume [veh/h]	0	0	0	497	0	888	0	1508	877	280	1832	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	7	0	0	0	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	6	0	0	0	6	0	6	6	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	46	0	0	0	31	0	13	44	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	12	0	0	20	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall				No				No		No	No	
Maximum Recall				No				No		No	No	
Pedestrian Recall				No				No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	R	C	R	L	C
C, Cycle Length [s]		90	90	90	90	90	90
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		26	26	43	43	9	56
g / C, Green / Cycle		0.29	0.29	0.47	0.47	0.10	0.62
(v / s)_i Volume / Saturation Flow Rate		0.14	0.23	0.26	0.23	0.08	0.32
s, saturation flow rate [veh/h]		3500	3800	5700	3800	3500	5700
c, Capacity [veh/h]		1028	1116	2692	1795	353	3520
d1, Uniform Delay [s]		26.18	29.31	17.05	16.30	39.57	9.71
k, delay calibration		0.11	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.35	1.34	0.85	0.95	4.06	0.55
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.48	0.80	0.56	0.49	0.79	0.52
d, Delay for Lane Group [s/veh]		26.53	30.65	17.90	17.26	43.64	10.26
Lane Group LOS		C	C	B	B	D	B
Critical Lane Group		No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]		4.33	8.77	7.25	6.11	3.18	6.19
50th-Percentile Queue Length [ft/ln]		108.29	219.30	181.28	152.74	79.59	154.76
95th-Percentile Queue Length [veh/ln]		7.75	13.63	11.67	10.16	5.73	10.27
95th-Percentile Queue Length [ft/ln]		193.63	340.73	291.69	254.08	143.26	256.77

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	26.53	0.00	30.65	0.00	17.90	17.26	43.64	10.26	0.00
Movement LOS				C		C		B	B	D	B	
d_A, Approach Delay [s/veh]	0.00			29.17			17.66			14.69		
Approach LOS	A			C			B			B		
d_I, Intersection Delay [s/veh]	19.30											
Intersection LOS	B											
Intersection V/C	0.667											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.278	2.468	0.000	0.000
Crosswalk LOS	B	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	933	600	889
d_b, Bicycle Delay [s]	45.01	12.81	22.06	13.90
l_b,int, Bicycle LOS Score for Intersection	4.132	1.560	2.871	2.721
Bicycle LOS	D	A	C	B

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 3: SR-57 NB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	13.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.574

Intersection Setup

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			No			No			No		

Volumes

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	710	0	330	0	0	0	0	1637	600	0	1199	571
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	710	0	330	0	0	0	0	1637	600	0	1199	571
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	178	0	83	0	0	0	0	409	150	0	300	0
Total Analysis Volume [veh/h]	710	0	330	0	0	0	0	1637	600	0	1199	0
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Permiss	Split	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna
Signal Group	3	0	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	0	0	0	0	0	0	6	0	0	6	0
Maximum Green [s]	30	0	0	0	0	0	0	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	54	0	0	0	0	0	0	36	0	0	36	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	25	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R		C	C	R	C
C, Cycle Length [s]	90	90		90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	22	22		59	59	59	59
g / C, Green / Cycle	0.25	0.25		0.66	0.66	0.66	0.66
(v / s)_i Volume / Saturation Flow Rate	0.20	0.17		0.29	0.29	0.29	0.21
s, saturation flow rate [veh/h]	3500	1900		3800	1900	1900	5700
c, Capacity [veh/h]	873	474		2514	1257	1257	3771
d1, Uniform Delay [s]	31.75	30.63		7.29	7.29	7.29	6.51
k, delay calibration	0.11	0.11		0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.90	1.86		0.57	1.14	1.14	0.22
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.81	0.70		0.44	0.44	0.44	0.32
d, Delay for Lane Group [s/veh]	33.65	32.49		7.86	8.43	8.43	6.74
Lane Group LOS	C	C		A	A	A	A
Critical Lane Group	Yes	No		Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	7.29	6.58		4.62	4.82	4.82	2.90
50th-Percentile Queue Length [ft/ln]	182.25	164.38		115.52	120.50	120.50	72.53
95th-Percentile Queue Length [veh/ln]	11.72	10.78		8.15	8.42	8.42	5.22
95th-Percentile Queue Length [ft/ln]	292.95	269.51		203.66	210.51	210.51	130.55

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	33.65	0.00	32.49	0.00	0.00	0.00	0.00	7.91	8.43	0.00	6.74	0.00
Movement LOS	C		C					A	A		A	
d_A, Approach Delay [s/veh]	33.28			0.00			8.15			6.74		
Approach LOS	C			A			A			A		
d_I, Intersection Delay [s/veh]	13.61											
Intersection LOS	B											
Intersection V/C	0.574											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.63	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.619	0.000	0.000	0.000
Crosswalk LOS	B	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1112	0	712	712
d_b, Bicycle Delay [s]	8.86	44.96	18.65	18.65
l_b,int, Bicycle LOS Score for Intersection	1.560	4.132	2.790	2.219
Bicycle LOS	A	D	C	B

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 4: Randolph Avenue at Birch Street

Control Type:	Signalized	Delay (sec / veh):	21.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.541

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Base Volume Input [veh/h]	143	75	186	55	53	112	93	770	103	206	1215	49
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	143	75	186	55	53	112	93	770	103	206	1215	49
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	19	47	14	13	28	23	193	26	52	304	12
Total Analysis Volume [veh/h]	143	75	186	55	53	112	93	770	103	206	1215	49
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	40	0	0	40	0	21	30	0	20	29	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	25	0	0	19	0	0	18	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	11	11	11	11	6	54	54	12	61	61
g / C, Green / Cycle	0.13	0.13	0.13	0.13	0.13	0.07	0.60	0.60	0.14	0.67	0.67
(v / s)_i Volume / Saturation Flow Rate	0.08	0.04	0.10	0.03	0.09	0.05	0.23	0.22	0.11	0.32	0.03
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1800	1900	1900	1800	3800	1900
c, Capacity [veh/h]	131	242	242	214	242	124	1146	1146	245	2548	1274
d1, Uniform Delay [s]	36.97	35.70	38.01	35.37	37.55	41.19	9.27	9.16	37.96	7.19	5.02
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	65.37	0.72	5.06	0.63	3.35	8.79	1.00	0.93	7.55	0.64	0.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.10	0.31	0.77	0.26	0.68	0.75	0.39	0.37	0.84	0.48	0.04
d, Delay for Lane Group [s/veh]	102.35	36.42	43.07	36.00	40.90	49.98	10.27	10.09	45.51	7.83	5.08
Lane Group LOS	F	D	D	D	D	D	B	B	D	A	A
Critical Lane Group	No	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	5.04	1.53	4.25	1.11	3.65	2.31	4.40	4.17	4.87	4.98	0.29
50th-Percentile Queue Length [ft/ln]	125.96	38.20	106.20	27.81	91.25	57.65	110.05	104.16	121.82	124.53	7.19
95th-Percentile Queue Length [veh/ln]	9.02	2.75	7.63	2.00	6.57	4.15	7.84	7.50	8.49	8.64	0.52
95th-Percentile Queue Length [ft/ln]	225.47	68.77	190.71	50.07	164.25	103.77	196.07	187.49	212.33	216.03	12.95

Movement, Approach, & Intersection Results

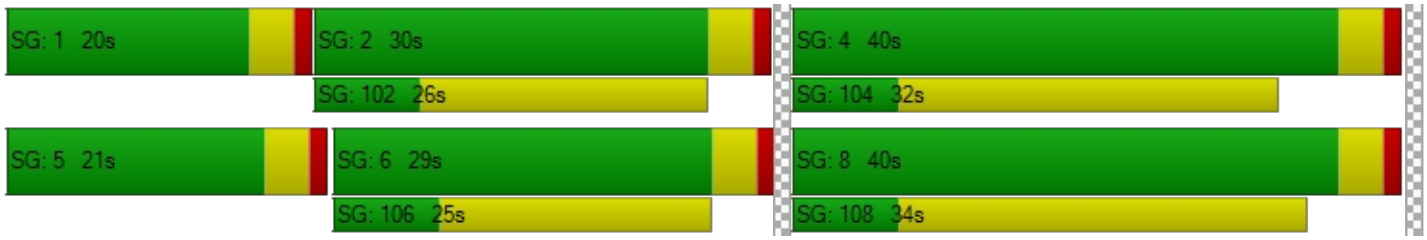
d_M, Delay for Movement [s/veh]	102.35	36.42	43.07	36.00	40.90	40.90	49.98	10.19	10.09	45.51	7.83	5.08
Movement LOS	F	D	D	D	D	D	D	B	B	D	A	A
d_A, Approach Delay [s/veh]	62.82			39.67			14.01			13.02		
Approach LOS	E			D			B			B		
d_I, Intersection Delay [s/veh]	21.82											
Intersection LOS	C											
Intersection V/C	0.541											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.70	34.70	34.70	34.70
l_p,int, Pedestrian LOS Score for Intersection	2.317	2.082	2.978	2.934
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	800	800	577	555
d_b, Bicycle Delay [s]	16.22	16.22	22.78	23.49
l_b,int, Bicycle LOS Score for Intersection	2.226	1.923	2.357	2.772
Bicycle LOS	B	A	B	C

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: State College Boulevard at Birch Street

Control Type:	Signalized	Delay (sec / veh):	37.7
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.870

Intersection Setup

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Base Volume Input [veh/h]	157	468	182	393	415	363	320	892	182	165	1138	749
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	157	468	182	393	415	363	320	892	182	165	1138	749
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	117	46	98	104	91	80	223	46	41	285	187
Total Analysis Volume [veh/h]	157	468	182	393	415	363	320	892	182	165	1138	749
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	10	39	0	23	52	0	16	42	0	11	37	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	28	0	0	30	0	0	28	0	0	26	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	115	115	115	115	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	19	19	15	28	28	12	58	58	7	53	53
g / C, Green / Cycle	0.05	0.17	0.17	0.13	0.25	0.25	0.10	0.50	0.50	0.06	0.46	0.46
(v / s)_i Volume / Saturation Flow Rate	0.04	0.12	0.10	0.11	0.22	0.19	0.09	0.23	0.10	0.05	0.30	0.39
s, saturation flow rate [veh/h]	3500	3800	1900	3500	1900	1900	3500	3800	1900	3500	3800	1900
c, Capacity [veh/h]	185	635	317	463	468	468	367	1901	950	216	1736	868
d1, Uniform Delay [s]	54.03	45.54	44.16	48.81	41.83	40.41	50.74	18.79	15.90	53.18	24.23	28.02
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.14	1.70	1.64	4.44	6.03	2.80	6.47	0.83	0.45	5.58	1.95	11.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.74	0.57	0.85	0.89	0.78	0.87	0.47	0.19	0.77	0.66	0.86
d, Delay for Lane Group [s/veh]	64.17	47.23	45.79	53.25	47.85	43.21	57.22	19.62	16.35	58.76	26.18	39.08
Lane Group LOS	E	D	D	D	D	D	E	B	B	E	C	D
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.51	6.49	4.92	5.79	12.04	9.88	4.86	7.83	2.75	2.51	12.20	20.53
50th-Percentile Queue Length [ft/ln]	62.80	162.16	123.09	144.68	301.11	247.02	121.52	195.80	68.68	62.87	305.09	513.21
95th-Percentile Queue Length [veh/ln]	4.52	10.66	8.56	9.73	17.74	15.04	8.48	12.42	4.94	4.53	17.93	27.96
95th-Percentile Queue Length [ft/ln]	113.05	266.59	214.07	243.31	443.41	375.89	211.91	310.54	123.62	113.17	448.32	698.98

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	64.17	47.23	45.79	53.25	47.85	43.21	57.22	19.62	16.35	58.76	26.18	39.08
Movement LOS	E	D	D	D	D	D	E	B	B	E	C	D
d_A, Approach Delay [s/veh]	50.20			48.23			27.82			33.51		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	37.71											
Intersection LOS	D											
Intersection V/C	0.870											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	47.05	47.05	47.05	47.05
l_p,int, Pedestrian LOS Score for Intersection	2.824	2.905	3.031	3.096
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	608	834	661	574
d_b, Bicycle Delay [s]	27.84	19.53	25.80	29.25
l_b,int, Bicycle LOS Score for Intersection	2.225	2.526	2.710	3.253
Bicycle LOS	B	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 6: S Associated Road at Birch Street

Control Type:	Signalized	Delay (sec / veh):	28.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.760

Intersection Setup

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Base Volume Input [veh/h]	559	37	403	11	23	11	17	1039	349	332	1466	19
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	559	37	403	11	23	11	17	1039	349	332	1466	19
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	140	9	101	3	6	3	4	260	87	83	367	5
Total Analysis Volume [veh/h]	559	37	403	11	23	11	17	1039	349	332	1466	19
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	8	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups			1,8									
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	6	0	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	30	0	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	28	65	65	0	37	0	10	38	0	17	45	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	26	26	0	26	0	0	27	0	0	26	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No		No		No	No		No	No	
Maximum Recall	No	No	No		No		No	No		No	No	
Pedestrian Recall	No	No	No		No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	21	30	47	5	5	3	65	65	13	75	75
g / C, Green / Cycle	0.18	0.25	0.39	0.04	0.04	0.02	0.54	0.54	0.11	0.63	0.63
(v / s)_i Volume / Saturation Flow Rate	0.16	0.02	0.21	0.01	0.02	0.01	0.38	0.35	0.09	0.39	0.39
s, saturation flow rate [veh/h]	3500	1900	1900	1800	1900	1800	1900	1900	3500	1900	1900
c, Capacity [veh/h]	624	477	747	77	75	40	1027	1027	380	1191	1191
d1, Uniform Delay [s]	48.21	34.34	28.07	55.73	56.40	57.94	20.39	19.57	52.69	13.72	13.71
k, delay calibration	0.11	0.11	0.34	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.83	0.07	1.90	0.84	4.29	7.10	3.97	3.22	6.36	2.47	2.46
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.90	0.08	0.54	0.14	0.46	0.43	0.70	0.65	0.87	0.62	0.62
d, Delay for Lane Group [s/veh]	53.04	34.41	29.98	56.57	60.69	65.04	24.36	22.78	59.05	16.19	16.17
Lane Group LOS	D	C	C	E	E	E	C	C	E	B	B
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	8.57	0.84	9.28	0.34	1.10	0.59	15.49	13.75	5.26	12.45	12.43
50th-Percentile Queue Length [ft/ln]	214.28	21.07	231.98	8.51	27.45	14.71	387.34	343.81	131.44	311.24	310.65
95th-Percentile Queue Length [veh/ln]	13.37	1.52	14.27	0.61	1.98	1.06	21.95	19.83	9.02	18.24	18.21
95th-Percentile Queue Length [ft/ln]	334.32	37.93	356.87	15.33	49.41	26.49	548.72	495.86	225.45	455.91	455.18

Movement, Approach, & Intersection Results

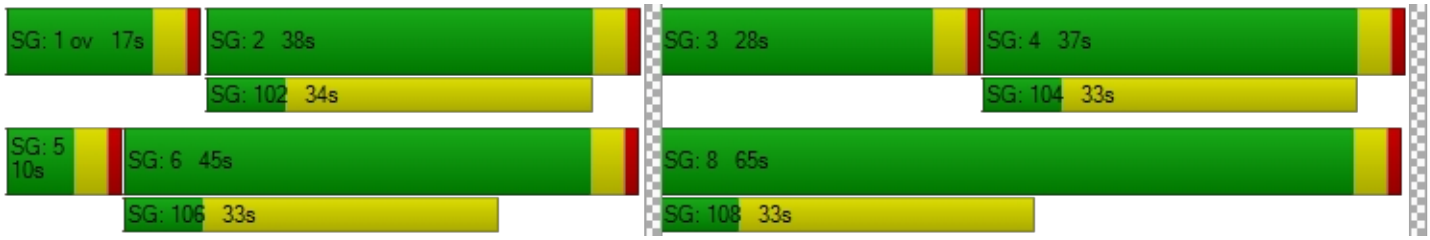
d_M, Delay for Movement [s/veh]	53.04	34.41	29.98	56.57	60.69	60.69	65.04	23.87	22.78	59.05	16.18	16.17
Movement LOS	D	C	C	E	E	E	E	C	C	E	B	B
d_A, Approach Delay [s/veh]	43.05			59.68			24.10			24.01		
Approach LOS	D			E			C			C		
d_I, Intersection Delay [s/veh]	28.87											
Intersection LOS	C											
Intersection V/C	0.760											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.51	49.51	49.51	49.51
l_p,int, Pedestrian LOS Score for Intersection	2.743	1.992	2.985	3.014
Crosswalk LOS	B	A	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1017	550	567	683
d_b, Bicycle Delay [s]	14.51	31.54	30.82	26.01
l_b,int, Bicycle LOS Score for Intersection	3.208	1.634	2.719	3.059
Bicycle LOS	C	A	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 7: Randolph Avenue at Madison Way

Control Type:	Signalized	Delay (sec / veh):	16.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.194

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Base Volume Input [veh/h]	48	361	45	29	273	32	68	4	55	79	4	38
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	48	361	45	29	273	32	68	4	55	79	4	38
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	90	11	7	68	8	17	1	14	20	1	10
Total Analysis Volume [veh/h]	48	361	45	29	273	32	68	4	55	79	4	38
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	6	6	0	6	6	0	0	6	0	0	6	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	25	50	0	10	35	0	0	30	0	0	30	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	15	0	0	12	0	0	19	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	69	69	3	68	68	6	6	6	6
g / C, Green / Cycle	0.05	0.77	0.77	0.04	0.76	0.76	0.06	0.06	0.06	0.06
(v / s)_i Volume / Saturation Flow Rate	0.03	0.11	0.11	0.02	0.08	0.08	0.04	0.03	0.04	0.02
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1900	1800	1900	1800	1900
c, Capacity [veh/h]	86	1456	1456	64	1433	1433	126	123	110	123
d1, Uniform Delay [s]	41.94	2.76	2.75	42.56	2.96	2.96	40.91	40.63	41.17	40.26
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.56	0.20	0.20	4.91	0.15	0.15	3.57	2.85	8.36	1.62
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.56	0.14	0.14	0.45	0.11	0.11	0.54	0.48	0.72	0.34
d, Delay for Lane Group [s/veh]	47.50	2.96	2.95	47.47	3.12	3.11	44.48	43.48	49.53	41.87
Lane Group LOS	D	A	A	D	A	A	D	D	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.17	0.76	0.74	0.71	0.60	0.59	1.57	1.35	1.95	0.94
50th-Percentile Queue Length [ft/ln]	29.14	19.00	18.41	17.84	15.09	14.75	39.36	33.67	48.77	23.41
95th-Percentile Queue Length [veh/ln]	2.10	1.37	1.33	1.28	1.09	1.06	2.83	2.42	3.51	1.69
95th-Percentile Queue Length [ft/ln]	52.45	34.19	33.13	32.12	27.16	26.54	70.84	60.61	87.79	42.14

Movement, Approach, & Intersection Results

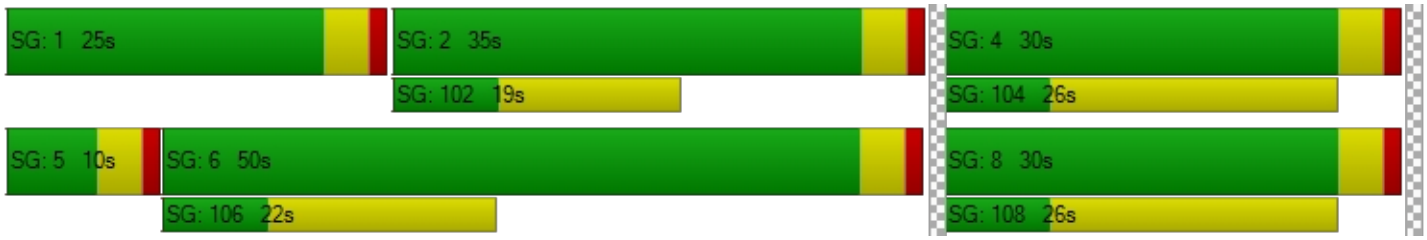
d_M, Delay for Movement [s/veh]	47.50	2.96	2.95	47.47	3.11	3.11	44.48	43.48	43.48	49.53	41.87	41.87
Movement LOS	D	A	A	D	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	7.67			6.96			44.02			46.88		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	16.47											
Intersection LOS	B											
Intersection V/C	0.194											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	34.68	34.68
l_p,int, Pedestrian LOS Score for Intersection	2.580	2.552	2.008	2.004
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1022	689	578	578
d_b, Bicycle Delay [s]	10.76	19.35	22.77	22.77
l_b,int, Bicycle LOS Score for Intersection	1.934	1.835	1.769	1.759
Bicycle LOS	A	A	A	A

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 8: Randolph Avenue at Brea Mall

Control Type:	Signalized	Delay (sec / veh):	17.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.350

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Base Volume Input [veh/h]	17	367	338	39	392	21	18	3	12	288	3	48
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	367	338	39	392	21	18	3	12	288	3	48
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	92	85	10	98	5	5	1	3	72	1	12
Total Analysis Volume [veh/h]	17	367	338	39	392	21	18	3	12	288	3	48
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	6	6	0	6	6	0	0	6	0	0	6	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	29	0	10	29	0	0	30	0	0	31	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	17	0	0	18	0	0	19	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	R	L	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	72	64	64	72	66	66	4	4	12	12
g / C, Green / Cycle	0.72	0.64	0.64	0.72	0.66	0.66	0.04	0.04	0.12	0.12
(v / s)_i Volume / Saturation Flow Rate	0.01	0.19	0.18	0.02	0.11	0.11	0.01	0.01	0.10	0.09
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1900	1800	1900	1800	1900
c, Capacity [veh/h]	1324	1221	1221	1243	1253	1253	66	70	217	229
d1, Uniform Delay [s]	3.88	7.92	7.77	3.93	6.51	6.50	46.99	46.73	42.79	42.42
k, delay calibration	0.11	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.00	0.63	0.56	0.05	0.29	0.28	2.73	1.16	6.41	4.40
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.01	0.30	0.28	0.03	0.17	0.16	0.32	0.17	0.79	0.73
d, Delay for Lane Group [s/veh]	3.88	8.55	8.34	3.97	6.79	6.78	49.72	47.89	49.20	46.82
Lane Group LOS	A	A	A	A	A	A	D	D	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.08	3.41	3.08	0.21	1.63	1.60	0.56	0.31	4.49	4.23
50th-Percentile Queue Length [ft/ln]	2.10	85.26	76.99	5.19	40.70	40.11	13.94	7.77	112.21	105.63
95th-Percentile Queue Length [veh/ln]	0.15	6.14	5.54	0.37	2.93	2.89	1.00	0.56	7.96	7.60
95th-Percentile Queue Length [ft/ln]	3.77	153.46	138.58	9.34	73.25	72.21	25.10	13.99	199.07	189.91

Movement, Approach, & Intersection Results

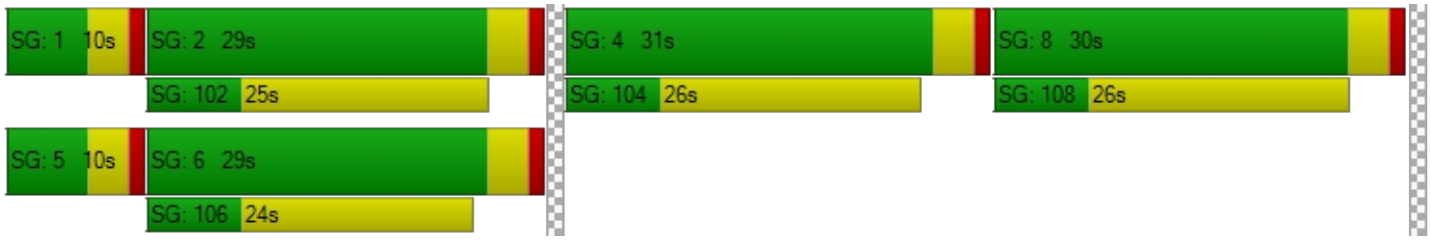
d_M, Delay for Movement [s/veh]	3.88	8.55	8.34	3.97	6.78	6.78	49.72	49.72	47.89	48.24	46.82	46.82
Movement LOS	A	A	A	A	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	8.34			6.54			49.06			48.03		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	17.39											
Intersection LOS	B											
Intersection V/C	0.350											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	39.62	39.62	39.62	39.62
l_p,int, Pedestrian LOS Score for Intersection	2.580	2.477	1.986	2.216
Crosswalk LOS	B	B	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	500	500	520	540
d_b, Bicycle Delay [s]	28.14	28.14	27.40	26.66
l_b,int, Bicycle LOS Score for Intersection	2.155	1.933	1.614	2.119
Bicycle LOS	B	A	A	B

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 9: Brea Mall South at State College Boulevard

Control Type:	Signalized	Delay (sec / veh):	27.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.603

Intersection Setup

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Base Volume Input [veh/h]	151	26	67	45	20	402	519	596	23	104	490	28
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	151	26	67	45	20	402	519	596	23	104	490	28
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	38	7	17	11	5	101	130	149	6	26	123	7
Total Analysis Volume [veh/h]	151	26	67	45	20	402	519	596	23	104	490	28
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	4	5	2	0	1	6	0
Auxiliary Signal Groups						4,5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	6	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	30	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	37	0	0	10	10	31	31	0	32	32	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	26	0	0	0	0	0	20	0	0	21	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No	No	No	No		No	No	
Maximum Recall		No			No	No	No	No		No	No	
Pedestrian Recall		No			No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	C	C	R	L	C	C	L	C	C
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	9	9	6	6	45	21	71	71	8	57	57
g / C, Green / Cycle	0.08	0.08	0.08	0.06	0.06	0.41	0.19	0.64	0.64	0.07	0.52	0.52
(v / s)_i Volume / Saturation Flow Rate	0.03	0.06	0.04	0.03	0.01	0.21	0.15	0.16	0.16	0.06	0.14	0.14
s, saturation flow rate [veh/h]	1800	1800	1900	1800	1900	1900	3500	1900	1900	1800	1900	1900
c, Capacity [veh/h]	189	209	159	101	107	773	680	1216	1216	135	989	989
d1, Uniform Delay [s]	47.93	49.39	47.95	50.35	49.61	24.60	42.01	8.55	8.53	50.04	14.67	14.64
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.29	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.01	2.23	1.76	3.05	0.84	1.44	1.82	0.51	0.50	8.90	0.65	0.64
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.33	0.55	0.42	0.45	0.19	0.52	0.76	0.26	0.25	0.77	0.26	0.26
d, Delay for Lane Group [s/veh]	48.94	51.62	49.71	53.40	50.45	26.04	43.83	9.06	9.03	58.94	15.33	15.27
Lane Group LOS	D	D	D	D	D	C	D	A	A	E	B	B
Critical Lane Group	No	Yes	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.69	3.19	1.82	1.29	0.55	8.09	6.80	3.19	3.14	3.14	3.74	3.67
50th-Percentile Queue Length [ft/ln]	42.20	79.86	45.58	32.15	13.76	202.28	169.92	79.66	78.45	78.51	93.61	91.81
95th-Percentile Queue Length [veh/ln]	3.04	5.75	3.28	2.31	0.99	12.76	11.07	5.74	5.65	5.65	6.74	6.61
95th-Percentile Queue Length [ft/ln]	75.96	143.74	82.05	57.87	24.77	318.90	276.81	143.38	141.20	141.32	168.49	165.26

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	50.44	51.62	49.71	53.40	50.45	26.04	43.83	9.04	9.03	58.94	15.30	15.27
Movement LOS	D	D	D	D	D	C	D	A	A	E	B	B
d_A, Approach Delay [s/veh]	50.40			29.73			24.91			22.60		
Approach LOS	D			C			C			C		
d_I, Intersection Delay [s/veh]	27.75											
Intersection LOS	C											
Intersection V/C	0.603											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	44.60	44.60	0.00	44.60
l_p,int, Pedestrian LOS Score for Intersection	2.386	2.512	0.000	2.569
Crosswalk LOS	B	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	599	109	490	509
d_b, Bicycle Delay [s]	27.00	49.21	31.36	30.61
l_b,int, Bicycle LOS Score for Intersection	1.962	1.945	2.498	2.073
Bicycle LOS	A	A	B	B

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 10: Harbor Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	69.8
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.041

Intersection Setup

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	786	1305	282	288	1020	439	336	1361	417	455	1692	299
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	786	1305	282	288	1020	439	336	1361	417	455	1692	299
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	197	326	71	72	255	110	84	340	104	114	423	75
Total Analysis Volume [veh/h]	786	1305	282	288	1020	439	336	1361	417	455	1692	299
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	24	47	0	16	39	0	16	42	0	15	41	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	31	0	0	28	0	0	31	0	0	29	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	20	40	40	12	31	31	12	41	41	11	40	40
g / C, Green / Cycle	0.17	0.33	0.33	0.10	0.26	0.26	0.10	0.35	0.35	0.09	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.22	0.23	0.15	0.08	0.18	0.23	0.10	0.32	0.30	0.13	0.30	0.16
s, saturation flow rate [veh/h]	3500	5700	1900	3500	5700	1900	3500	3800	1900	3500	5700	1900
c, Capacity [veh/h]	585	1883	628	346	1494	498	354	1310	655	325	1918	639
d1, Uniform Delay [s]	50.02	34.93	31.63	53.15	39.84	42.54	53.69	37.74	36.93	54.49	37.60	31.37
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.31	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	157.17	0.46	0.50	5.23	0.56	13.24	13.16	11.79	15.21	184.43	6.27	2.45
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.34	0.69	0.45	0.83	0.68	0.88	0.95	0.92	0.88	1.40	0.88	0.47
d, Delay for Lane Group [s/veh]	207.19	35.40	32.13	58.38	40.40	55.78	66.85	49.53	52.15	238.92	43.87	33.82
Lane Group LOS	F	D	C	E	D	E	E	D	D	F	D	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	21.52	11.04	6.52	4.52	9.07	14.23	5.69	18.85	18.35	13.22	16.54	7.26
50th-Percentile Queue Length [ft/ln]	537.88	276.06	163.05	112.94	226.76	355.74	142.13	471.28	458.63	330.60	413.43	181.44
95th-Percentile Queue Length [veh/ln]	33.12	16.49	10.71	8.00	14.01	20.42	9.60	25.97	25.37	21.43	23.21	11.68
95th-Percentile Queue Length [ft/ln]	828.09	412.30	267.76	200.08	350.24	510.41	239.89	649.30	634.24	535.79	580.16	291.90

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	207.19	35.40	32.13	58.38	40.40	55.78	66.85	49.83	52.15	238.92	43.87	33.82
Movement LOS	F	D	C	E	D	E	E	D	D	F	D	C
d_A, Approach Delay [s/veh]	91.91			47.23			52.99			78.92		
Approach LOS	F			D			D			E		
d_I, Intersection Delay [s/veh]	69.78											
Intersection LOS	E											
Intersection V/C	1.041											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.54	49.54	49.54	49.54
l_p,int, Pedestrian LOS Score for Intersection	3.325	3.262	3.352	3.337
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	716	583	633	616
d_b, Bicycle Delay [s]	24.73	30.13	28.04	28.73
l_b,int, Bicycle LOS Score for Intersection	2.865	2.520	2.722	2.905
Bicycle LOS	C	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 11: Puente Street at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	16.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.634

Intersection Setup

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	38	51	89	236	113	228	146	1702	40	112	1921	399
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	38	51	89	236	113	228	146	1702	40	112	1921	399
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	13	22	59	28	57	37	426	10	28	480	100
Total Analysis Volume [veh/h]	38	51	89	236	113	228	146	1702	40	112	1921	399
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	38	0	0	38	0	18	41	0	11	34	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	23	0	0	17	0	0	23	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	15	15	15	15	15	9	56	56	7	54	54
g / C, Green / Cycle	0.16	0.16	0.16	0.16	0.16	0.16	0.10	0.63	0.63	0.08	0.60	0.60
(v / s)_i Volume / Saturation Flow Rate	0.02	0.03	0.05	0.13	0.03	0.12	0.08	0.30	0.31	0.06	0.34	0.21
s, saturation flow rate [veh/h]	1800	1900	1900	1800	3800	1900	1800	3800	1900	1800	5700	1900
c, Capacity [veh/h]	293	309	309	298	617	309	183	2374	1187	143	3435	1145
d1, Uniform Delay [s]	32.28	32.47	33.15	36.36	32.56	35.91	39.56	9.09	9.24	40.69	10.73	9.01
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.20	0.25	0.51	4.73	0.14	3.46	7.71	0.71	1.52	8.90	0.66	0.84
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.13	0.17	0.29	0.79	0.18	0.74	0.80	0.48	0.50	0.78	0.56	0.35
d, Delay for Lane Group [s/veh]	32.47	32.72	33.66	41.10	32.71	39.36	47.27	9.79	10.76	49.59	11.39	9.84
Lane Group LOS	C	C	C	D	C	D	D	A	B	D	B	A
Critical Lane Group	No	No	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.72	0.97	1.73	5.30	1.06	4.98	3.51	5.54	6.11	2.76	7.00	3.82
50th-Percentile Queue Length [ft/ln]	17.94	24.22	43.29	132.53	26.62	124.49	87.67	138.60	152.87	69.05	174.97	95.41
95th-Percentile Queue Length [veh/ln]	1.29	1.74	3.12	9.08	1.92	8.64	6.31	9.41	10.17	4.97	11.34	6.87
95th-Percentile Queue Length [ft/ln]	32.30	43.59	77.92	226.93	47.91	215.98	157.81	235.14	254.25	124.29	283.44	171.74

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.47	32.72	33.66	41.10	32.71	39.36	47.27	10.11	10.76	49.59	11.39	9.84
Movement LOS	C	C	C	D	C	D	D	B	B	D	B	A
d_A, Approach Delay [s/veh]	33.14			38.77			13.00			12.90		
Approach LOS	C			D			B			B		
d_I, Intersection Delay [s/veh]	16.59											
Intersection LOS	B											
Intersection V/C	0.634											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.70	34.70	34.70	34.70
l_p,int, Pedestrian LOS Score for Intersection	2.386	2.528	3.215	3.604
Crosswalk LOS	B	B	C	D
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	755	755	822	666
d_b, Bicycle Delay [s]	17.44	17.44	15.63	20.02
l_b,int, Bicycle LOS Score for Intersection	1.853	2.036	2.598	2.897
Bicycle LOS	A	B	B	C

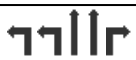
Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 12: Brea Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	41.4
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.878

Intersection Setup

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	553	989	298	277	712	234	263	1927	455	270	1872	207
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	553	989	298	277	712	234	263	1927	455	270	1872	207
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	138	247	75	69	178	59	66	482	114	68	468	52
Total Analysis Volume [veh/h]	553	989	298	277	712	234	263	1927	455	270	1872	207
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	23	47	0	15	39	0	14	44	0	14	44	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	30	0	0	28	0	0	30	0	0	30	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	19	34	34	11	26	26	10	49	49	10	49	49
g / C, Green / Cycle	0.16	0.28	0.28	0.09	0.22	0.22	0.08	0.41	0.41	0.08	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.16	0.17	0.16	0.08	0.19	0.12	0.08	0.34	0.24	0.08	0.33	0.11
s, saturation flow rate [veh/h]	3500	5700	1900	3500	3800	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	556	1606	535	325	820	410	296	2324	775	296	2324	775
d1, Uniform Delay [s]	50.47	37.49	36.75	53.68	45.46	42.13	54.43	31.84	27.71	54.54	31.38	23.65
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	16.48	0.39	0.91	6.33	2.99	1.25	8.91	3.59	3.25	10.76	3.10	0.85
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.99	0.62	0.56	0.85	0.87	0.57	0.89	0.83	0.59	0.91	0.81	0.27
d, Delay for Lane Group [s/veh]	66.95	37.87	37.65	60.01	48.45	43.39	63.34	35.43	30.96	65.30	34.48	24.50
Lane Group LOS	E	D	D	E	D	D	E	D	C	E	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	9.54	8.46	7.58	4.41	10.54	6.35	4.30	17.11	10.77	4.49	16.31	4.09
50th-Percentile Queue Length [ft/ln]	238.52	211.49	189.50	110.13	263.44	158.87	107.50	427.82	269.33	112.23	407.80	102.34
95th-Percentile Queue Length [veh/ln]	14.61	13.23	12.10	7.85	15.86	10.49	7.70	23.90	16.16	7.96	22.94	7.37
95th-Percentile Queue Length [ft/ln]	365.16	330.74	302.38	196.18	396.54	262.23	192.52	597.43	403.90	199.10	573.39	184.21

Movement, Approach, & Intersection Results

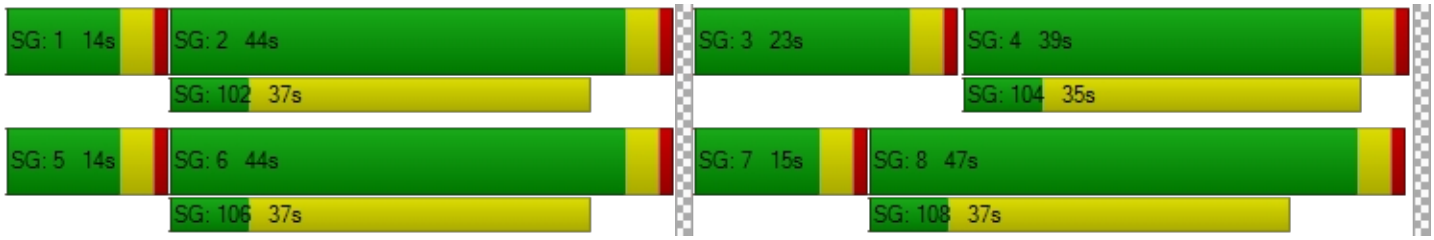
d_M, Delay for Movement [s/veh]	66.95	37.87	37.65	60.01	48.45	43.39	63.34	35.43	30.96	65.30	34.48	24.50
Movement LOS	E	D	D	E	D	D	E	D	C	E	C	C
d_A, Approach Delay [s/veh]	46.58			50.10			37.44			37.14		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	41.36											
Intersection LOS	D											
Intersection V/C	0.878											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.54	49.54	49.54	49.54
l_p,int, Pedestrian LOS Score for Intersection	3.139	3.066	3.438	3.389
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	716	583	666	666
d_b, Bicycle Delay [s]	24.73	30.13	26.69	26.69
l_b,int, Bicycle LOS Score for Intersection	2.572	2.569	3.014	2.852
Bicycle LOS	B	B	C	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 13: Randolph Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	24.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.736

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	61	41	72	350	32	230	270	1903	47	77	2114	356
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	61	41	72	350	32	230	270	1903	47	77	2114	356
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	10	18	88	8	58	68	476	12	19	529	89
Total Analysis Volume [veh/h]	61	41	72	350	32	230	270	1903	47	77	2114	356
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	10	0	0	41	0	14	44	0	10	40	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	29	0	0	28	0	0	29	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	105	105	105	105	105	105	105	105	105	105	105
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	6	6	18	18	10	59	59	6	55	55
g / C, Green / Cycle	0.06	0.06	0.06	0.17	0.17	0.10	0.56	0.56	0.06	0.52	0.52
(v / s)_i Volume / Saturation Flow Rate	0.03	0.03	0.04	0.10	0.14	0.08	0.34	0.35	0.04	0.37	0.19
s, saturation flow rate [veh/h]	1800	1800	1900	3500	1900	3500	3800	1900	1800	5700	1900
c, Capacity [veh/h]	108	108	114	592	321	334	2139	1069	100	2982	994
d1, Uniform Delay [s]	47.79	47.81	48.27	40.32	42.09	46.60	15.16	15.48	48.95	19.00	14.71
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.14	3.22	5.66	0.95	5.03	4.64	1.25	2.75	11.47	1.45	1.01
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.47	0.48	0.63	0.59	0.82	0.81	0.60	0.62	0.77	0.71	0.36
d, Delay for Lane Group [s/veh]	50.93	51.03	53.94	41.26	47.12	51.24	16.41	18.23	60.42	20.45	15.71
Lane Group LOS	D	D	D	D	D	D	B	B	E	C	B
Critical Lane Group	No	No	Yes	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.37	1.39	2.02	4.23	6.94	3.66	9.89	10.94	2.31	12.72	5.10
50th-Percentile Queue Length [ft/ln]	34.37	34.86	50.43	105.84	173.62	91.41	247.36	273.54	57.64	318.07	127.43
95th-Percentile Queue Length [veh/ln]	2.47	2.51	3.63	7.61	11.27	6.58	15.05	16.37	4.15	18.57	8.80
95th-Percentile Queue Length [ft/ln]	61.87	62.74	90.78	190.20	281.67	164.54	376.33	409.16	103.76	464.32	220.00

Movement, Approach, & Intersection Results

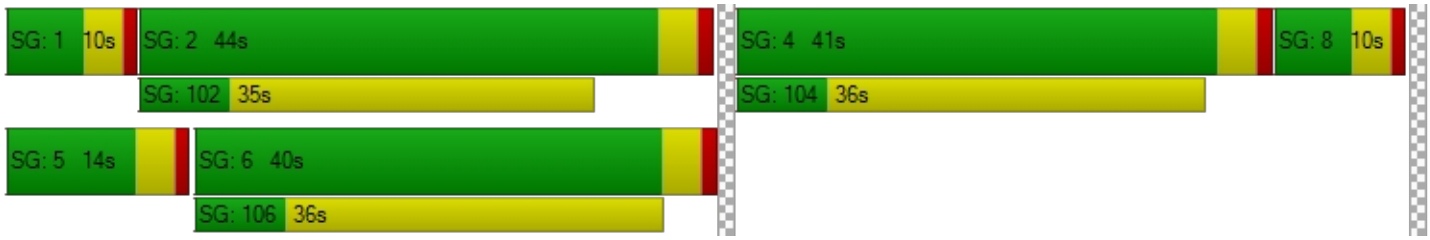
d_M, Delay for Movement [s/veh]	50.95	51.03	53.94	41.26	47.12	47.12	51.24	17.01	18.23	60.42	20.45	15.71
Movement LOS	D	D	D	D	D	D	D	B	B	E	C	B
d_A, Approach Delay [s/veh]	52.20			43.77			21.19			21.00		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	24.56											
Intersection LOS	C											
Intersection V/C	0.736											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	42.11	42.11	42.11	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.219	2.557	3.296	0.000
Crosswalk LOS	B	B	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	114	704	761	685
d_b, Bicycle Delay [s]	46.70	22.05	20.14	22.70
l_b,int, Bicycle LOS Score for Intersection	1.703	2.569	2.781	2.960
Bicycle LOS	A	B	C	C

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 14: State College Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	69.4
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.067

Intersection Setup

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	385	628	471	464	331	103	118	2080	118	497	2038	518
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	385	628	471	464	331	103	118	2080	118	497	2038	518
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	96	157	118	116	83	26	30	520	30	124	510	130
Total Analysis Volume [veh/h]	385	628	471	464	331	103	118	2080	118	497	2038	518
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	29	41	0	27	39	0	11	34	0	18	41	41
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	30	0	0	28	0	0	23	0	0	23	23
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	16	33	33	23	40	40	6	34	34	14	42	69
g / C, Green / Cycle	0.13	0.27	0.27	0.19	0.33	0.33	0.05	0.29	0.29	0.12	0.35	0.58
(v / s)_i Volume / Saturation Flow Rate	0.11	0.17	0.25	0.23	0.12	0.11	0.03	0.28	0.30	0.14	0.36	0.27
s, saturation flow rate [veh/h]	3500	3800	1900	2000	1900	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	462	1036	518	384	632	632	177	1623	541	412	2005	1096
d1, Uniform Delay [s]	50.86	38.07	42.25	48.54	30.37	30.04	56.03	42.96	42.96	53.00	38.94	14.78
k, delay calibration	0.11	0.11	0.32	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.01	0.58	15.88	99.51	0.34	0.30	4.27	22.29	56.83	98.64	24.34	1.46
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.83	0.61	0.91	1.21	0.36	0.33	0.67	1.00	1.06	1.21	1.02	0.47
d, Delay for Lane Group [s/veh]	54.87	38.65	58.13	148.04	30.71	30.34	60.30	65.25	99.80	151.64	63.27	16.24
Lane Group LOS	D	D	E	F	C	C	E	E	F	F	F	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.90	8.12	15.67	11.02	5.03	4.58	1.86	19.19	24.38	11.83	23.80	8.42
50th-Percentile Queue Length [ft/ln]	147.46	203.10	391.79	275.54	125.72	114.39	46.60	479.76	609.61	295.80	595.04	210.54
95th-Percentile Queue Length [veh/ln]	9.88	12.80	22.16	17.94	8.71	8.08	3.35	26.37	33.79	18.81	32.17	13.18
95th-Percentile Queue Length [ft/ln]	247.03	319.97	554.10	448.51	217.66	202.09	83.87	659.36	844.78	470.30	804.36	329.52

Movement, Approach, & Intersection Results

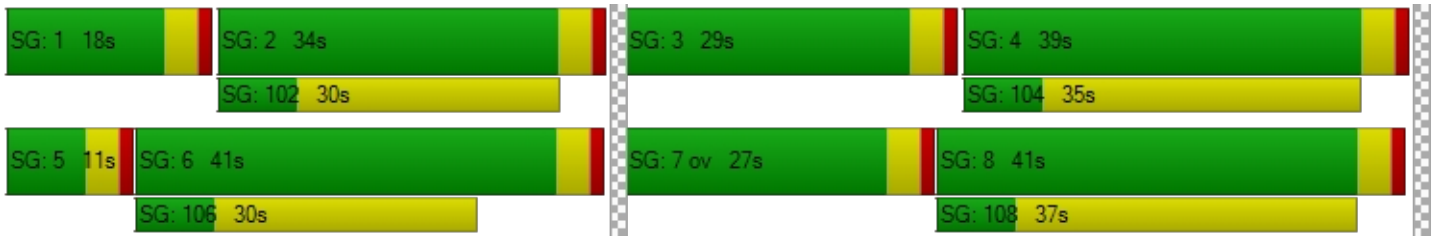
d_M, Delay for Movement [s/veh]	54.87	38.65	58.13	148.04	30.59	30.34	60.30	72.85	99.80	151.64	63.27	16.24
Movement LOS	D	D	E	F	C	C	E	E	F	F	F	B
d_A, Approach Delay [s/veh]	49.04			91.25			73.58			69.68		
Approach LOS	D			F			E			E		
d_I, Intersection Delay [s/veh]	69.39											
Intersection LOS	E											
Intersection V/C	1.067											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.54	49.54	49.54	49.54
l_p,int, Pedestrian LOS Score for Intersection	2.946	2.818	3.388	3.572
Crosswalk LOS	C	C	C	D
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	616	583	500	616
d_b, Bicycle Delay [s]	28.73	30.13	33.78	28.73
l_b,int, Bicycle LOS Score for Intersection	2.784	2.300	2.515	3.239
Bicycle LOS	C	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 15: SR-57 SB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	17.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.795

Intersection Setup

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	0	0	0	764	0	601	0	1892	1130	0	2644	475
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	764	0	601	0	1892	1130	0	2644	475
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	191	0	150	0	473	283	0	661	119
Total Analysis Volume [veh/h]	0	0	0	764	0	601	0	1892	1130	0	2644	475
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	7	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	6	0	0	0	6	0	0	6	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	64	0	0	0	26	0	0	26	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	15	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	C
C, Cycle Length [s]		90	90	90	90	90
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		28	28	28	54	54
g / C, Green / Cycle		0.31	0.31	0.31	0.60	0.60
(v / s)_i Volume / Saturation Flow Rate		0.26	0.26	0.24	0.33	0.46
s, saturation flow rate [veh/h]		1750	1750	1900	5700	5700
c, Capacity [veh/h]		542	542	589	3426	3426
d1, Uniform Delay [s]		28.91	28.91	28.13	10.70	13.33
k, delay calibration		0.11	0.11	0.11	0.50	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		3.57	3.57	2.20	0.65	1.75
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.84	0.84	0.77	0.55	0.77
d, Delay for Lane Group [s/veh]		32.48	32.48	30.33	11.34	15.07
Lane Group LOS		C	C	C	B	B
Critical Lane Group		Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]		9.35	9.35	8.94	6.90	12.21
50th-Percentile Queue Length [ft/ln]		233.84	233.84	223.46	172.48	305.27
95th-Percentile Queue Length [veh/ln]		14.37	14.37	13.84	11.21	17.94
95th-Percentile Queue Length [ft/ln]		359.23	359.23	346.04	280.17	448.54

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	32.48	0.00	30.85	0.00	11.34	0.00	0.00	15.07	0.00
Movement LOS				C		C		B			B	
d_A, Approach Delay [s/veh]	0.00			31.76			11.34			15.07		
Approach LOS	A			C			B			B		
d_I, Intersection Delay [s/veh]	17.74											
Intersection LOS	B											
Intersection V/C	0.795											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	34.63	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	2.463	0.000	0.000
Crosswalk LOS	F	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1335	489	489
d_b, Bicycle Delay [s]	44.96	4.98	25.65	25.65
l_b,int, Bicycle LOS Score for Intersection	4.132	3.812	2.600	3.014
Bicycle LOS	D	D	B	C

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 16: SR-57 NB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	26.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.806

Intersection Setup

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	1115	64	506	0	0	192	182	2113	421	0	2761	38
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1115	64	506	0	0	192	182	2113	421	0	2761	38
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	279	16	127	0	0	48	46	528	105	0	690	10
Total Analysis Volume [veh/h]	1115	64	506	0	0	192	182	2113	421	0	2761	38
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Overlap	Protecte	Permiss	Unsigna	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	0	5	5	2	0	0	6	0
Auxiliary Signal Groups						5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	6	0	0	0	6	6	6	0	0	6	0
Maximum Green [s]	0	30	0	0	0	30	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	1.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	50	0	0	0	25	25	55	0	0	30	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	22	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No				No		No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No				No	No	No			No	
Maximum Recall		No				No	No	No			No	
Pedestrian Recall		No				No	No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	R	L	C	C	C
C, Cycle Length [s]	105	105	105	105	105	105	105	105
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	31	31	31	13	13	66	49	49
g / C, Green / Cycle	0.30	0.30	0.30	0.12	0.12	0.63	0.46	0.46
(v / s)_i Volume / Saturation Flow Rate	0.24	0.24	0.22	0.05	0.10	0.37	0.37	0.37
s, saturation flow rate [veh/h]	3500	1750	1900	3800	1800	5700	5700	1900
c, Capacity [veh/h]	1043	521	566	469	222	3568	2647	882
d1, Uniform Delay [s]	33.92	34.24	33.39	42.48	44.87	11.67	23.84	23.84
k, delay calibration	0.11	0.13	0.11	0.11	0.11	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.43	4.04	2.08	0.57	7.29	0.73	2.54	7.25
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.80	0.82	0.76	0.41	0.82	0.59	0.79	0.79
d, Delay for Lane Group [s/veh]	35.36	38.28	35.47	43.06	52.16	12.40	26.38	31.09
Lane Group LOS	D	D	D	D	D	B	C	C
Critical Lane Group	No	Yes	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	9.78	10.53	10.03	2.33	5.04	9.23	14.73	15.88
50th-Percentile Queue Length [ft/ln]	244.47	263.36	250.73	58.28	126.07	230.65	368.19	397.09
95th-Percentile Queue Length [veh/ln]	14.91	15.86	15.22	4.20	8.73	14.21	21.02	22.42
95th-Percentile Queue Length [ft/ln]	372.69	396.43	380.57	104.90	218.14	355.19	525.54	560.49

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	36.09	38.28	35.94	0.00	0.00	43.06	52.16	12.40	0.00	0.00	27.51	31.09
Movement LOS	D	D	D			D	D	B			C	C
d_A, Approach Delay [s/veh]	36.13			43.06			15.56			27.56		
Approach LOS	D			D			B			C		
d_I, Intersection Delay [s/veh]	26.10											
Intersection LOS	C											
Intersection V/C	0.806											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	42.07	42.07	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.636	2.102	0.000	0.000
Crosswalk LOS	B	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	876	400	971	495
d_b, Bicycle Delay [s]	16.57	33.60	13.88	29.72
l_b,int, Bicycle LOS Score for Intersection	4.340	1.560	2.822	2.714
Bicycle LOS	E	A	C	B

Sequence

Ring 1	-	2	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 17: Associated Road at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	46.6
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.939

Intersection Setup

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	245	299	102	335	402	289	309	2154	158	210	1954	213
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	245	299	102	335	402	289	309	2154	158	210	1954	213
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	61	75	26	84	101	72	77	539	40	53	489	53
Total Analysis Volume [veh/h]	245	299	102	335	402	289	309	2154	158	210	1954	213
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	39	0	16	43	0	26	48	0	17	39	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	28	0	0	29	0	0	26	0	0	25	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	24	24	12	28	28	22	55	55	13	46	46
g / C, Green / Cycle	0.07	0.20	0.20	0.10	0.23	0.23	0.18	0.46	0.46	0.11	0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.07	0.11	0.10	0.10	0.21	0.15	0.17	0.40	0.42	0.12	0.28	0.29
s, saturation flow rate [veh/h]	3500	1900	1900	3500	1900	1900	1800	3800	1900	1800	5700	1900
c, Capacity [veh/h]	238	384	384	354	446	446	331	1727	864	197	2167	722
d1, Uniform Delay [s]	55.98	42.98	42.57	53.67	44.59	41.47	48.32	29.82	30.57	53.50	32.17	32.61
k, delay calibration	0.11	0.11	0.11	0.11	0.21	0.11	0.22	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	34.79	1.20	1.02	12.79	11.90	1.58	20.37	6.87	15.76	49.42	2.36	7.73
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.03	0.54	0.50	0.95	0.90	0.65	0.93	0.88	0.91	1.07	0.74	0.77
d, Delay for Lane Group [s/veh]	90.76	44.18	43.59	66.47	56.50	43.05	68.69	36.68	46.33	102.91	34.52	40.35
Lane Group LOS	F	D	D	E	E	D	E	D	D	F	C	D
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.76	5.69	5.19	5.65	13.01	7.91	10.95	21.05	24.41	8.63	13.77	15.51
50th-Percentile Queue Length [ft/ln]	118.88	142.16	129.83	141.27	325.36	197.74	273.81	526.18	610.19	215.77	344.32	387.63
95th-Percentile Queue Length [veh/ln]	8.41	9.60	8.93	9.55	18.93	12.52	16.38	28.57	32.51	13.80	19.86	21.96
95th-Percentile Queue Length [ft/ln]	210.14	239.93	223.27	238.73	473.27	313.05	409.50	714.27	812.75	345.03	496.48	549.07

Movement, Approach, & Intersection Results

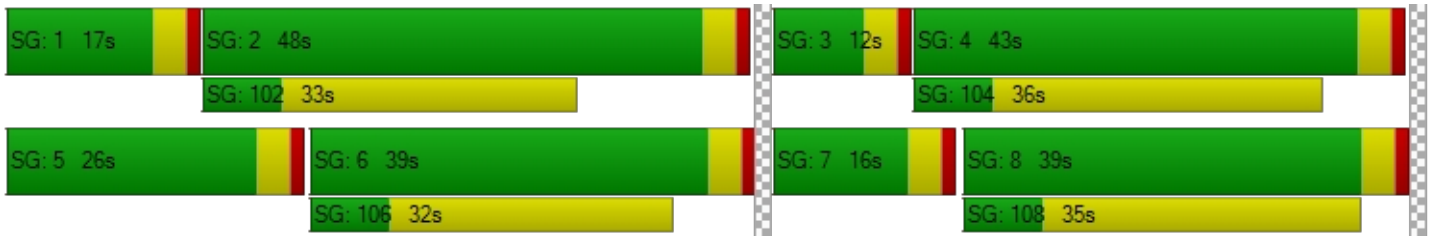
d_M, Delay for Movement [s/veh]	90.76	44.00	43.59	66.47	56.50	43.05	68.69	39.51	46.33	102.91	35.55	40.35
Movement LOS	F	D	D	E	E	D	E	D	D	F	D	D
d_A, Approach Delay [s/veh]	61.67			55.96			43.36			41.93		
Approach LOS	E			E			D			D		
d_I, Intersection Delay [s/veh]	46.56											
Intersection LOS	D											
Intersection V/C	0.939											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.54	49.54	49.54	49.54
l_p,int, Pedestrian LOS Score for Intersection	2.590	2.767	3.362	3.345
Crosswalk LOS	B	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	583	650	733	583
d_b, Bicycle Delay [s]	30.13	27.37	24.09	30.13
l_b,int, Bicycle LOS Score for Intersection	2.093	3.253	3.001	2.540
Bicycle LOS	B	C	C	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 18: Castlegate Lane/Placentia Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	28.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.845

Intersection Setup

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	275	54	310	29	26	16	22	2179	313	268	2235	66
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	275	54	310	29	26	16	22	2179	313	268	2235	66
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	69	14	78	7	7	4	6	545	78	67	559	17
Total Analysis Volume [veh/h]	275	54	310	29	26	16	22	2179	313	268	2235	66
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	29	0	0	10	0	10	32	0	34	56	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	15	0	0	0	0	0	21	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	C
C, Cycle Length [s]	105	105	105	105	105	105	105	105	105	105	105
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	20	20	20	5	5	3	46	46	18	61	61
g / C, Green / Cycle	0.19	0.19	0.19	0.05	0.05	0.03	0.44	0.44	0.17	0.58	0.58
(v / s)_i Volume / Saturation Flow Rate	0.09	0.09	0.16	0.02	0.02	0.01	0.38	0.16	0.15	0.40	0.42
s, saturation flow rate [veh/h]	1750	1750	1900	1800	1900	1800	5700	1900	1800	3800	1900
c, Capacity [veh/h]	328	328	356	92	97	51	2505	835	306	2209	1104
d1, Uniform Delay [s]	38.28	38.33	41.47	48.12	48.41	50.25	26.73	19.77	42.55	15.31	15.76
k, delay calibration	0.11	0.11	0.14	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.17	1.20	8.13	1.95	3.05	5.74	4.46	1.29	7.89	1.75	3.96
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.50	0.51	0.87	0.32	0.43	0.43	0.87	0.37	0.88	0.68	0.71
d, Delay for Lane Group [s/veh]	39.45	39.54	49.60	50.07	51.46	55.99	31.18	21.05	50.45	17.05	19.72
Lane Group LOS	D	D	D	D	D	E	C	C	D	B	B
Critical Lane Group	No	No	Yes	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.86	3.92	8.52	0.78	1.15	0.65	16.86	5.34	7.39	12.24	13.80
50th-Percentile Queue Length [ft/ln]	96.42	97.97	212.88	19.54	28.71	16.22	421.58	133.58	184.85	305.94	344.88
95th-Percentile Queue Length [veh/ln]	6.94	7.05	13.30	1.41	2.07	1.17	23.60	9.13	11.85	17.97	19.89
95th-Percentile Queue Length [ft/ln]	173.55	176.35	332.52	35.17	51.67	29.19	589.94	228.35	296.33	449.37	497.16

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	39.48	39.54	49.60	50.07	51.46	51.46	55.99	31.18	21.05	50.45	17.92	19.72
Movement LOS	D	D	D	D	D	D	E	C	C	D	B	B
d_A, Approach Delay [s/veh]	44.39			50.89			30.14			21.36		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	28.07											
Intersection LOS	C											
Intersection V/C	0.845											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	42.11	42.11	0.00	42.11
l_p,int, Pedestrian LOS Score for Intersection	2.442	2.017	0.000	3.310
Crosswalk LOS	B	B	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	476	114	533	990
d_b, Bicycle Delay [s]	30.50	46.70	28.26	13.40
l_b,int, Bicycle LOS Score for Intersection	2.614	1.677	2.942	2.973
Bicycle LOS	B	A	C	C

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Brea Mall Expansion, Brea

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Report File: N:\...\Sat 2045.pdf

Scenario 12 Sat MD 2045
4/18/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State College Boulevard at Lambert Road	Signalized	HCM 6th Edition	SB Left	0.848	48.2	D
2	SR-57 SB Ramps at Lambert Road	Signalized	HCM 6th Edition	WB Left	0.788	30.2	C
3	SR-57 NB Ramps at Lambert Road	Signalized	HCM 6th Edition	NB Left	0.774	19.5	B
4	Randolph Avenue at Birch Street	Signalized	HCM 6th Edition	EB Left	0.497	18.9	B
5	State College Boulevard at Birch Street	Signalized	HCM 6th Edition	EB Left	0.779	41.0	D
6	S Associated Road at Birch Street	Signalized	HCM 6th Edition	EB Left	0.596	21.0	C
7	Randolph Avenue at Madison Way	Signalized	HCM 6th Edition	WB Left	0.266	17.1	B
8	Randolph Avenue at Brea Mall	Signalized	HCM 6th Edition	EB Left	0.478	21.8	C
9	Brea Mall South at State College Boulevard	Signalized	HCM 6th Edition	WB Left	0.786	31.8	C
10	Harbor Boulevard at Imperial Highway	Signalized	HCM 6th Edition	NB Left	0.895	52.7	D
11	Puente Street at Imperial Highway	Signalized	HCM 6th Edition	WB Left	0.475	13.1	B
12	Brea Boulevard at Imperial Highway	Signalized	HCM 6th Edition	WB Left	0.865	44.2	D
13	Randolph Avenue at Imperial Highway	Signalized	HCM 6th Edition	WB Left	0.888	42.4	D
14	State College Boulevard at Imperial Highway	Signalized	HCM 6th Edition	SB Left	1.369	134.5	F
15	SR-57 SB Ramps at Imperial Highway	Signalized	HCM 6th Edition	SB Left	0.838	20.4	C
16	SR-57 NB Ramps at Imperial Highway	Signalized	HCM 6th Edition	EB Left	0.947	42.5	D
17	Associated Road at Imperial Highway	Signalized	HCM 6th Edition	NB Left	0.827	35.9	D
18	Castlegate Lane/Placentia	Signalized	HCM 6th	EB Left	0.807	23.5	C

16	Avenue at Imperial Highway	Signalized	Edition	EB Left	0.807	23.5	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: State College Boulevard at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	48.2
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.848

Intersection Setup

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	154	290	408	574	406	5	20	1322	290	780	1745	789
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	154	290	408	574	406	5	20	1322	290	780	1745	789
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	73	102	144	102	1	5	331	73	195	436	197
Total Analysis Volume [veh/h]	154	290	408	574	406	5	20	1322	290	780	1745	789
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	10	33	0	21	44	0	19	39	0	27	47	47
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	0	0	0	33	0	0	28	0	0	22	22
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	6	19	19	19	17	30	30	3	45	45	23	65	86
g / C, Green / Cycle	0.05	0.16	0.16	0.16	0.14	0.25	0.25	0.02	0.37	0.37	0.19	0.54	0.71
(v / s)_i Volume / Saturation Flow Rate	0.04	0.13	0.12	0.11	0.16	0.11	0.11	0.01	0.21	0.21	0.22	0.31	0.42
s, saturation flow rate [veh/h]	3500	1900	1900	1900	3500	1900	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	178	305	305	305	497	478	478	88	2123	708	671	3072	1357
d1, Uniform Delay [s]	56.58	48.90	47.94	47.80	51.51	37.69	37.67	57.36	30.06	29.88	48.52	18.39	8.38
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.90	6.43	3.39	3.14	75.08	0.61	0.61	1.28	1.13	3.19	76.82	0.77	1.82
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.87	0.84	0.73	0.72	1.15	0.43	0.43	0.23	0.57	0.56	1.16	0.57	0.58
d, Delay for Lane Group [s/veh]	68.48	55.33	51.33	50.93	126.58	38.30	38.28	58.65	31.19	33.07	125.34	19.16	10.21
Lane Group LOS	E	E	D	D	F	D	D	E	C	C	F	B	B
Critical Lane Group	No	Yes	No	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.61	7.98	6.64	6.46	12.64	5.18	5.15	0.31	9.51	9.66	17.16	10.67	9.63
50th-Percentile Queue Length [ft/ln]	65.29	199.5	166.0	161.5	315.89	129.42	128.79	7.84	237.72	241.48	428.92	266.70	240.67
95th-Percentile Queue Length [veh/ln]	4.70	12.62	10.87	10.63	19.66	8.91	8.87	0.56	14.57	14.76	25.81	16.02	14.72
95th-Percentile Queue Length [ft/ln]	117.5	315.4	271.7	265.7	491.46	222.70	221.85	14.12	364.15	368.90	645.23	400.61	367.88

Movement, Approach, & Intersection Results

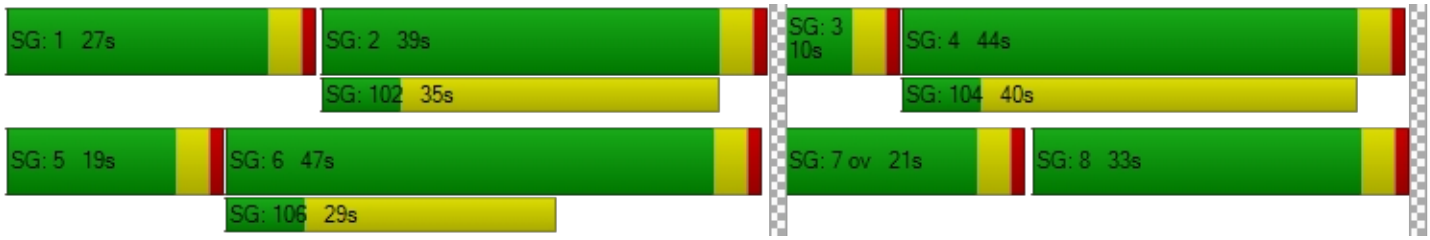
d_M, Delay for Movement [s/veh]	68.48	54.86	51.11	126.58	38.29	38.28	58.65	31.34	33.07	125.34	19.16	10.21
Movement LOS	E	D	D	F	D	D	E	C	C	F	B	B
d_A, Approach Delay [s/veh]	55.53			89.74			31.98			42.02		
Approach LOS	E			F			C			D		
d_I, Intersection Delay [s/veh]	48.23											
Intersection LOS	D											
Intersection V/C	0.848											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.52	49.52	49.52	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.932	2.805	3.246	0.000
Crosswalk LOS	C	C	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	483	666	583	716
d_b, Bicycle Delay [s]	34.52	26.68	30.12	24.72
l_b,int, Bicycle LOS Score for Intersection	2.263	2.372	2.233	3.382
Bicycle LOS	B	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: SR-57 SB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	30.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.788

Intersection Setup

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	0	0	0	900	0	1309	0	1680	609	246	2002	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	900	0	1309	0	1680	609	246	2002	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	225	0	327	0	420	152	62	501	0
Total Analysis Volume [veh/h]	0	0	0	900	0	1309	0	1680	609	246	2002	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	7	0	0	0	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	6	0	0	0	6	0	6	6	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	79	0	0	0	23	0	18	41	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	12	0	0	20	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall				No				No		No	No	
Maximum Recall				No				No		No	No	
Pedestrian Recall				No				No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	R	C	R	L	C
C, Cycle Length [s]		120	120	120	120	120	120
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		52	52	46	46	11	60
g / C, Green / Cycle		0.43	0.43	0.38	0.38	0.09	0.50
(v / s)_i Volume / Saturation Flow Rate		0.26	0.34	0.29	0.16	0.07	0.35
s, saturation flow rate [veh/h]		3500	3800	5700	3800	3500	5700
c, Capacity [veh/h]		1507	1636	2175	1450	307	2866
d1, Uniform Delay [s]		26.17	29.66	32.52	27.31	53.67	22.86
k, delay calibration		0.11	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.38	0.94	2.74	0.90	4.81	1.44
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.60	0.80	0.77	0.42	0.80	0.70
d, Delay for Lane Group [s/veh]		26.56	30.60	35.26	28.21	58.48	24.30
Lane Group LOS		C	C	D	C	E	C
Critical Lane Group		No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]		9.82	16.27	14.63	6.61	3.85	14.47
50th-Percentile Queue Length [ft/ln]		245.60	406.85	365.65	165.20	96.15	361.65
95th-Percentile Queue Length [veh/ln]		14.96	22.89	20.90	10.82	6.92	20.70
95th-Percentile Queue Length [ft/ln]		374.11	572.25	522.44	270.59	173.07	517.59

Movement, Approach, & Intersection Results

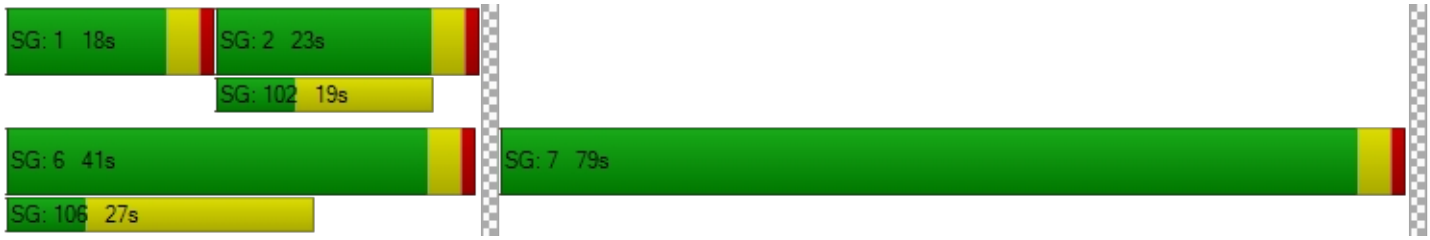
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	26.56	0.00	30.60	0.00	35.26	28.21	58.48	24.30	0.00
Movement LOS				C		C		D	C	E	C	
d_A, Approach Delay [s/veh]	0.00			28.95			33.38			28.04		
Approach LOS	A			C			C			C		
d_I, Intersection Delay [s/veh]	30.15											
Intersection LOS	C											
Intersection V/C	0.788											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.49	49.49	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.145	2.683	0.000	0.000
Crosswalk LOS	B	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1250	317	617
d_b, Bicycle Delay [s]	59.98	8.43	42.49	28.69
l_b,int, Bicycle LOS Score for Intersection	4.132	1.560	2.819	2.796
Bicycle LOS	D	A	C	C

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: SR-57 NB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	19.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.774

Intersection Setup

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			No			No			No		

Volumes

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	1159	0	519	0	0	0	0	1827	752	0	1067	473
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1159	0	519	0	0	0	0	1827	752	0	1067	473
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	290	0	130	0	0	0	0	457	188	0	267	0
Total Analysis Volume [veh/h]	1159	0	519	0	0	0	0	1827	752	0	1067	0
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Permiss	Split	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna
Signal Group	3	0	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	0	0	0	0	0	0	6	0	0	6	0
Maximum Green [s]	30	0	0	0	0	0	0	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	54	0	0	0	0	0	0	36	0	0	36	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	25	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R		C	C	R	C
C, Cycle Length [s]	90	90		90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	35	35		47	47	47	47
g / C, Green / Cycle	0.39	0.39		0.52	0.52	0.52	0.52
(v / s)_i Volume / Saturation Flow Rate	0.33	0.27		0.34	0.34	0.34	0.19
s, saturation flow rate [veh/h]	3500	1900		3800	1900	1900	5700
c, Capacity [veh/h]	1364	740		1981	990	990	2971
d1, Uniform Delay [s]	25.01	23.02		15.58	15.58	15.58	12.66
k, delay calibration	0.11	0.11		0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.58	1.22		1.68	3.32	3.32	0.34
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.70		0.65	0.65	0.65	0.36
d, Delay for Lane Group [s/veh]	26.59	24.24		17.26	18.90	18.90	13.00
Lane Group LOS	C	C		B	B	B	B
Critical Lane Group	Yes	No		Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	10.99	9.07		9.33	9.78	9.78	4.07
50th-Percentile Queue Length [ft/ln]	274.87	226.66		233.17	244.47	244.47	101.71
95th-Percentile Queue Length [veh/ln]	16.43	14.00		14.34	14.91	14.91	7.32
95th-Percentile Queue Length [ft/ln]	410.83	350.11		358.39	372.68	372.68	183.08

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	26.59	0.00	24.24	0.00	0.00	0.00	0.00	17.35	18.90	0.00	13.00	0.00
Movement LOS	C		C					B	B		B	
d_A, Approach Delay [s/veh]	25.86			0.00			18.08			13.00		
Approach LOS	C			A			B			B		
d_I, Intersection Delay [s/veh]	19.51											
Intersection LOS	B											
Intersection V/C	0.774											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.63	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.773	0.000	0.000	0.000
Crosswalk LOS	C	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1112	0	712	712
d_b, Bicycle Delay [s]	8.86	44.96	18.65	18.65
l_b,int, Bicycle LOS Score for Intersection	1.560	4.132	2.978	2.146
Bicycle LOS	A	D	C	B

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 4: Randolph Avenue at Birch Street

Control Type:	Signalized	Delay (sec / veh):	18.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.497

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Base Volume Input [veh/h]	107	81	192	63	39	92	93	739	134	168	895	27
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	107	81	192	63	39	92	93	739	134	168	895	27
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	20	48	16	10	23	23	185	34	42	224	7
Total Analysis Volume [veh/h]	107	81	192	63	39	92	93	739	134	168	895	27
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	38	0	0	38	0	23	30	0	22	29	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	25	0	0	19	0	0	18	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	12	12	12	12	6	56	56	10	60	60
g / C, Green / Cycle	0.13	0.13	0.13	0.13	0.13	0.07	0.62	0.62	0.11	0.67	0.67
(v / s)_i Volume / Saturation Flow Rate	0.06	0.04	0.10	0.04	0.07	0.05	0.24	0.22	0.09	0.24	0.01
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1800	1900	1900	1800	3800	1900
c, Capacity [veh/h]	168	247	247	214	247	124	1180	1180	207	2537	1269
d1, Uniform Delay [s]	36.23	35.59	37.91	35.31	36.60	41.18	8.46	8.32	38.89	6.51	5.05
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.94	0.76	5.17	0.76	1.75	8.72	0.93	0.85	7.35	0.39	0.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.64	0.33	0.78	0.29	0.53	0.75	0.38	0.36	0.81	0.35	0.02
d, Delay for Lane Group [s/veh]	40.17	36.36	43.08	36.07	38.35	49.90	9.39	9.18	46.24	6.90	5.08
Lane Group LOS	D	D	D	D	D	D	A	A	D	A	A
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.33	1.65	4.39	1.28	2.78	2.30	4.15	3.87	3.99	3.29	0.16
50th-Percentile Queue Length [ft/ln]	58.31	41.25	109.72	31.95	69.44	57.59	103.87	96.71	99.81	82.35	3.97
95th-Percentile Queue Length [veh/ln]	4.20	2.97	7.82	2.30	5.00	4.15	7.48	6.96	7.19	5.93	0.29
95th-Percentile Queue Length [ft/ln]	104.97	74.26	195.62	57.51	124.99	103.67	186.97	174.07	179.66	148.23	7.14

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.17	36.36	43.08	36.07	38.35	38.35	49.90	9.30	9.18	46.24	6.90	5.08
Movement LOS	D	D	D	D	D	D	D	A	A	D	A	A
d_A, Approach Delay [s/veh]	40.83			37.61			13.19			12.91		
Approach LOS	D			D			B			B		
d_I, Intersection Delay [s/veh]	18.87											
Intersection LOS	B											
Intersection V/C	0.497											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.70	34.70	34.70	34.70
l_p,int, Pedestrian LOS Score for Intersection	2.306	2.068	2.853	2.881
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	755	755	577	555
d_b, Bicycle Delay [s]	17.44	17.44	22.78	23.49
l_b,int, Bicycle LOS Score for Intersection	2.187	1.880	2.357	2.459
Bicycle LOS	B	A	B	B

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 5: State College Boulevard at Birch Street

Control Type:	Signalized	Delay (sec / veh):	41.0
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.779

Intersection Setup

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Base Volume Input [veh/h]	165	340	207	301	645	531	321	825	180	183	794	270
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	165	340	207	301	645	531	321	825	180	183	794	270
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	41	85	52	75	161	133	80	206	45	46	199	68
Total Analysis Volume [veh/h]	165	340	207	301	645	531	321	825	180	183	794	270
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	39	0	28	56	0	16	41	0	12	37	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	28	0	0	30	0	0	28	0	0	26	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	37	37	13	43	43	12	46	46	8	42	42
g / C, Green / Cycle	0.06	0.31	0.31	0.11	0.36	0.36	0.10	0.39	0.39	0.07	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.05	0.09	0.11	0.09	0.33	0.29	0.09	0.22	0.09	0.05	0.21	0.14
s, saturation flow rate [veh/h]	3500	3800	1900	3500	1900	1900	3500	3800	1900	3500	3800	1900
c, Capacity [veh/h]	207	1167	584	374	674	674	352	1465	732	236	1339	669
d1, Uniform Delay [s]	55.78	31.65	32.34	52.40	37.15	35.26	53.47	28.96	25.05	55.10	31.84	29.36
k, delay calibration	0.11	0.11	0.11	0.11	0.29	0.23	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.92	0.14	0.37	4.10	13.33	5.20	9.30	1.57	0.80	5.43	1.94	1.81
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.80	0.29	0.35	0.80	0.92	0.82	0.91	0.56	0.25	0.78	0.59	0.40
d, Delay for Lane Group [s/veh]	62.70	31.79	32.71	56.50	50.48	40.46	62.77	30.53	25.84	60.53	33.78	31.17
Lane Group LOS	E	C	C	E	D	D	E	C	C	E	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.67	3.79	4.75	4.64	19.72	15.52	5.25	9.59	3.66	2.90	9.75	6.22
50th-Percentile Queue Length [ft/ln]	66.66	94.87	118.84	116.07	492.92	387.91	131.15	239.82	91.55	72.57	243.74	155.60
95th-Percentile Queue Length [veh/ln]	4.80	6.83	8.33	8.18	27.00	21.98	9.00	14.67	6.59	5.23	14.87	10.32
95th-Percentile Queue Length [ft/ln]	119.99	170.77	208.23	204.42	674.98	549.41	225.06	366.81	164.79	130.63	371.77	257.88

Movement, Approach, & Intersection Results

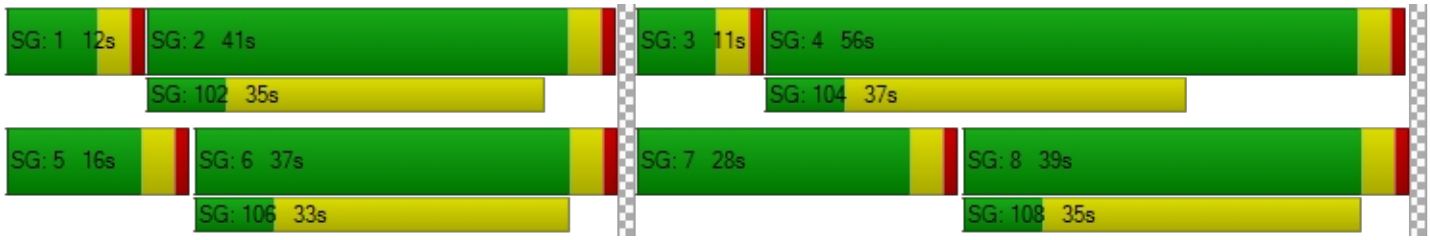
d_M, Delay for Movement [s/veh]	62.70	31.79	32.71	56.50	50.13	40.46	62.77	30.53	25.84	60.53	33.78	31.17
Movement LOS	E	C	C	E	D	D	E	C	C	E	C	C
d_A, Approach Delay [s/veh]	39.22			47.95			37.70			37.14		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	40.96											
Intersection LOS	D											
Intersection V/C	0.779											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.52	49.52	49.52	49.52
l_p,int, Pedestrian LOS Score for Intersection	2.847	2.858	3.000	2.967
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	583	866	617	550
d_b, Bicycle Delay [s]	30.12	19.28	28.72	31.55
l_b,int, Bicycle LOS Score for Intersection	2.147	2.778	2.654	2.588
Bicycle LOS	B	C	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: S Associated Road at Birch Street

Control Type:	Signalized	Delay (sec / veh):	21.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.596

Intersection Setup

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Base Volume Input [veh/h]	358	21	179	13	23	17	11	861	371	161	856	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	358	21	179	13	23	17	11	861	371	161	856	15
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	90	5	45	3	6	4	3	215	93	40	214	4
Total Analysis Volume [veh/h]	358	21	179	13	23	17	11	861	371	161	856	15
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	8	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups			1,8									
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	6	0	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	30	0	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	24	61	61	0	37	0	10	38	0	11	39	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	26	26	0	26	0	0	27	0	0	26	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No		No		No	No		No	No	
Maximum Recall	No	No	No		No		No	No		No	No	
Pedestrian Recall	No	No	No		No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	C
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	22	33	5	5	2	69	69	7	74	74
g / C, Green / Cycle	0.12	0.20	0.30	0.04	0.04	0.02	0.62	0.62	0.06	0.67	0.67
(v / s)_i Volume / Saturation Flow Rate	0.10	0.01	0.09	0.01	0.02	0.01	0.34	0.31	0.05	0.23	0.23
s, saturation flow rate [veh/h]	3500	1900	1900	1800	1900	1800	1900	1900	3500	1900	1900
c, Capacity [veh/h]	434	389	580	100	84	29	1182	1182	224	1273	1273
d1, Uniform Delay [s]	47.03	35.20	29.34	50.63	51.35	53.59	11.90	11.35	50.53	7.77	7.76
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.00	0.06	0.30	0.58	4.13	7.97	1.82	1.49	4.29	0.74	0.73
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.82	0.05	0.31	0.13	0.48	0.38	0.55	0.50	0.72	0.34	0.34
d, Delay for Lane Group [s/veh]	51.03	35.25	29.64	51.21	55.48	61.56	13.72	12.84	54.82	8.51	8.49
Lane Group LOS	D	D	C	D	E	E	B	B	D	A	A
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.01	0.46	3.68	0.36	1.17	0.37	9.06	7.81	2.30	4.33	4.30
50th-Percentile Queue Length [ft/ln]	125.13	11.53	91.98	9.03	29.31	9.13	226.53	195.18	57.61	108.28	107.42
95th-Percentile Queue Length [veh/ln]	8.67	0.83	6.62	0.65	2.11	0.66	14.00	12.39	4.15	7.74	7.70
95th-Percentile Queue Length [ft/ln]	216.85	20.76	165.56	16.25	52.76	16.43	349.95	309.74	103.70	193.60	192.41

Movement, Approach, & Intersection Results

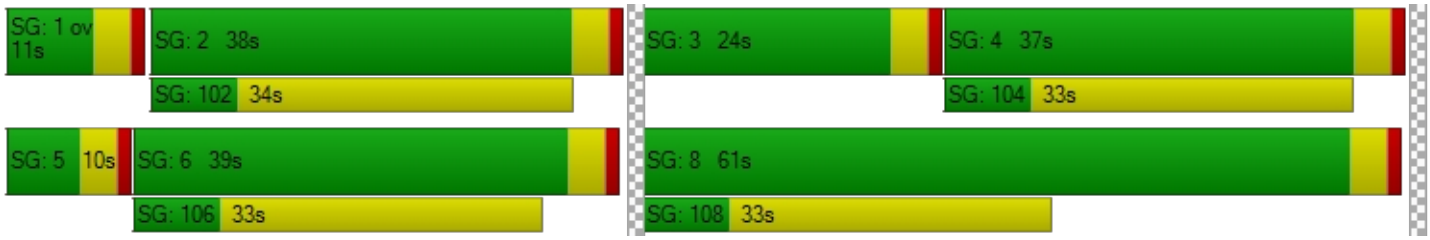
d_M, Delay for Movement [s/veh]	51.03	35.25	29.64	51.21	55.48	55.48	61.56	13.50	12.84	54.82	8.50	8.49
Movement LOS	D	D	C	D	E	E	E	B	B	D	A	A
d_A, Approach Delay [s/veh]	43.57			54.43			13.72			15.72		
Approach LOS	D			D			B			B		
d_I, Intersection Delay [s/veh]	20.96											
Intersection LOS	C											
Intersection V/C	0.596											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	44.56	44.56	44.56	44.56
l_p,int, Pedestrian LOS Score for Intersection	2.643	1.982	2.792	2.820
Crosswalk LOS	B	A	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1036	600	618	636
d_b, Bicycle Delay [s]	12.78	26.96	26.27	25.58
l_b,int, Bicycle LOS Score for Intersection	2.480	1.647	2.585	2.411
Bicycle LOS	B	A	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 7: Randolph Avenue at Madison Way

Control Type:	Signalized	Delay (sec / veh):	17.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.266

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Base Volume Input [veh/h]	23	395	120	76	280	25	40	12	63	87	4	60
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	395	120	76	280	25	40	12	63	87	4	60
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	99	30	19	70	6	10	3	16	22	1	15
Total Analysis Volume [veh/h]	23	395	120	76	280	25	40	12	63	87	4	60
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	6	6	0	6	6	0	0	6	0	0	6	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	26	0	10	26	0	0	54	0	0	54	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	15	0	0	12	0	0	19	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	66	66	5	69	69	6	6	6	6
g / C, Green / Cycle	0.03	0.74	0.74	0.06	0.77	0.77	0.07	0.07	0.07	0.07
(v / s)_i Volume / Saturation Flow Rate	0.01	0.14	0.13	0.04	0.08	0.08	0.02	0.04	0.05	0.03
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1900	1800	1900	1800	1900
c, Capacity [veh/h]	55	1401	1401	104	1453	1453	118	136	107	136
d1, Uniform Delay [s]	42.88	3.62	3.58	41.73	2.71	2.71	39.68	40.39	40.77	40.15
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.05	0.30	0.28	9.39	0.15	0.14	1.69	3.44	13.36	2.50
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.42	0.19	0.18	0.73	0.11	0.10	0.34	0.55	0.81	0.47
d, Delay for Lane Group [s/veh]	47.93	3.92	3.86	51.12	2.86	2.85	41.37	43.83	54.13	42.65
Lane Group LOS	D	A	A	D	A	A	D	D	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.57	1.25	1.16	1.91	0.56	0.55	0.89	1.72	2.26	1.44
50th-Percentile Queue Length [ft/ln]	14.37	31.25	28.95	47.83	13.94	13.67	22.19	42.96	56.45	36.05
95th-Percentile Queue Length [veh/ln]	1.03	2.25	2.08	3.44	1.00	0.98	1.60	3.09	4.06	2.60
95th-Percentile Queue Length [ft/ln]	25.87	56.26	52.11	86.10	25.09	24.60	39.93	77.32	101.61	64.88

Movement, Approach, & Intersection Results

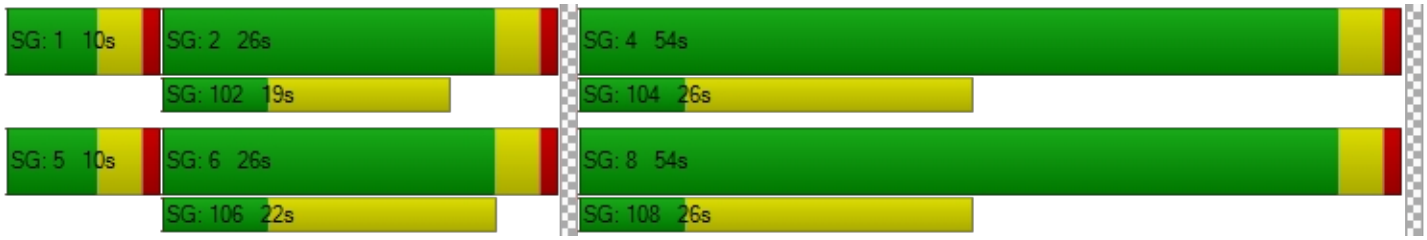
d_M, Delay for Movement [s/veh]	47.93	3.90	3.86	51.12	2.86	2.85	41.37	43.83	43.83	54.13	42.65	42.65
Movement LOS	D	A	A	D	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	5.77			12.49			42.97			49.27		
Approach LOS	A			B			D			D		
d_I, Intersection Delay [s/veh]	17.08											
Intersection LOS	B											
Intersection V/C	0.266											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	34.68	34.68
l_p,int, Pedestrian LOS Score for Intersection	2.612	2.527	1.994	2.056
Crosswalk LOS	B	B	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	489	489	1111	1111
d_b, Bicycle Delay [s]	25.70	25.70	8.90	8.90
l_b,int, Bicycle LOS Score for Intersection	2.003	1.874	1.749	1.809
Bicycle LOS	B	A	A	A

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 8: Randolph Avenue at Brea Mall

Control Type:	Signalized	Delay (sec / veh):	21.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.478

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Base Volume Input [veh/h]	26	467	453	45	336	23	25	16	28	415	6	82
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	467	453	45	336	23	25	16	28	415	6	82
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	117	113	11	84	6	6	4	7	104	2	21
Total Analysis Volume [veh/h]	26	467	453	45	336	23	25	16	28	415	6	82
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	6	6	0	6	6	0	0	6	0	0	6	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	29	0	10	29	0	0	30	0	0	31	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	17	0	0	18	0	0	19	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	R	L	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	66	58	58	66	59	59	5	5	17	17
g / C, Green / Cycle	0.66	0.58	0.58	0.66	0.59	0.59	0.05	0.05	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.01	0.25	0.24	0.03	0.10	0.09	0.02	0.01	0.14	0.13
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1900	1800	1900	1800	1900
c, Capacity [veh/h]	1209	1095	1095	1034	1118	1118	93	98	304	321
d1, Uniform Delay [s]	5.88	11.91	11.80	5.95	9.38	9.36	46.04	45.67	40.31	39.73
k, delay calibration	0.11	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.01	1.22	1.16	0.08	0.31	0.31	3.25	1.57	6.34	3.90
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.02	0.43	0.41	0.04	0.16	0.16	0.44	0.28	0.84	0.77
d, Delay for Lane Group [s/veh]	5.89	13.13	12.95	6.02	9.69	9.67	49.29	47.24	46.66	43.64
Lane Group LOS	A	B	B	A	A	A	D	D	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.18	5.86	5.63	0.33	1.80	1.77	1.07	0.71	6.58	6.08
50th-Percentile Queue Length [ft/ln]	4.39	146.57	140.69	8.14	45.08	44.34	26.72	17.75	164.45	152.02
95th-Percentile Queue Length [veh/ln]	0.32	9.83	9.52	0.59	3.25	3.19	1.92	1.28	10.78	10.12
95th-Percentile Queue Length [ft/ln]	7.90	245.84	237.95	14.65	81.14	79.81	48.10	31.95	269.61	253.12

Movement, Approach, & Intersection Results

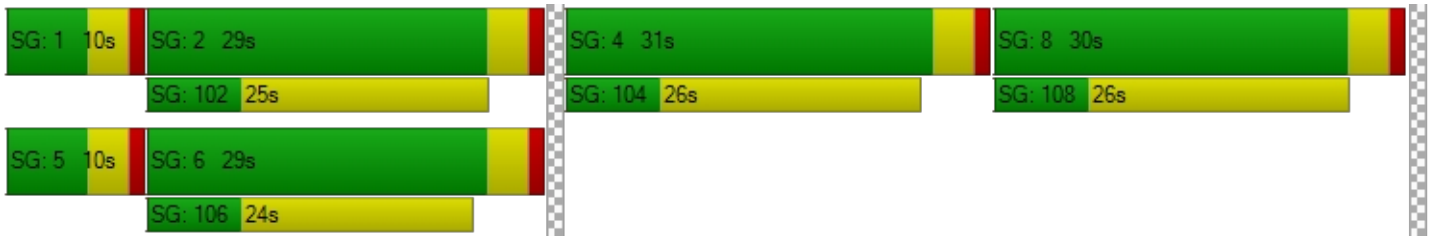
d_M, Delay for Movement [s/veh]	5.89	13.13	12.95	6.02	9.68	9.67	49.29	49.29	47.24	45.50	43.64	43.64
Movement LOS	A	B	B	A	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	12.85			9.27			48.46			45.18		
Approach LOS	B			A			D			D		
d_I, Intersection Delay [s/veh]	21.83											
Intersection LOS	C											
Intersection V/C	0.478											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	39.62	39.62	39.62	39.62
l_p,int, Pedestrian LOS Score for Intersection	2.641	2.495	2.008	2.314
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	500	500	520	540
d_b, Bicycle Delay [s]	28.14	28.14	27.40	26.66
l_b,int, Bicycle LOS Score for Intersection	2.340	1.893	1.673	2.390
Bicycle LOS	B	A	A	B

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 9: Brea Mall South at State College Boulevard

Control Type:	Signalized	Delay (sec / veh):	31.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.786

Intersection Setup

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Base Volume Input [veh/h]	184	34	99	65	29	555	711	511	41	93	674	38
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	184	34	99	65	29	555	711	511	41	93	674	38
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	46	9	25	16	7	139	178	128	10	23	169	10
Total Analysis Volume [veh/h]	184	34	99	65	29	555	711	511	41	93	674	38
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	4	5	2	0	1	6	0
Auxiliary Signal Groups						4,5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	6	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	30	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	37	0	0	12	12	39	31	0	40	32	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	26	0	0	0	0	0	20	0	0	21	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No	No	No	No		No	No	
Maximum Recall		No			No	No	No	No		No	No	
Pedestrian Recall		No			No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	C	C	R	L	C	C	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	11	11	8	8	58	30	77	77	8	54	54
g / C, Green / Cycle	0.10	0.10	0.10	0.07	0.07	0.48	0.25	0.64	0.64	0.07	0.45	0.45
(v / s)_i Volume / Saturation Flow Rate	0.05	0.08	0.05	0.04	0.02	0.29	0.20	0.15	0.14	0.05	0.19	0.19
s, saturation flow rate [veh/h]	1800	1800	1900	1800	1900	1900	3500	1900	1900	1800	1900	1900
c, Capacity [veh/h]	206	224	181	122	129	915	881	1209	1209	121	859	859
d1, Uniform Delay [s]	51.53	53.20	51.89	54.12	52.98	22.82	42.20	9.30	9.27	55.11	22.24	22.15
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.24	2.66	2.58	3.53	0.87	2.99	1.81	0.45	0.43	9.78	1.50	1.45
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.40	0.61	0.55	0.53	0.22	0.61	0.81	0.23	0.23	0.77	0.42	0.41
d, Delay for Lane Group [s/veh]	52.77	55.86	54.46	57.66	53.85	25.80	44.01	9.75	9.70	64.89	23.74	23.60
Lane Group LOS	D	E	D	E	D	C	D	A	A	E	C	C
Critical Lane Group	No	Yes	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.42	4.18	2.98	2.02	0.86	12.06	10.06	3.16	3.08	3.10	7.18	7.02
50th-Percentile Queue Length [ft/ln]	60.46	104.43	74.49	50.58	21.56	301.40	251.50	79.07	76.88	77.47	179.44	175.38
95th-Percentile Queue Length [veh/ln]	4.35	7.52	5.36	3.64	1.55	17.75	15.26	5.69	5.54	5.58	11.57	11.36
95th-Percentile Queue Length [ft/ln]	108.82	187.97	134.08	91.05	38.80	443.76	381.54	142.33	138.39	139.44	289.29	283.97

Movement, Approach, & Intersection Results

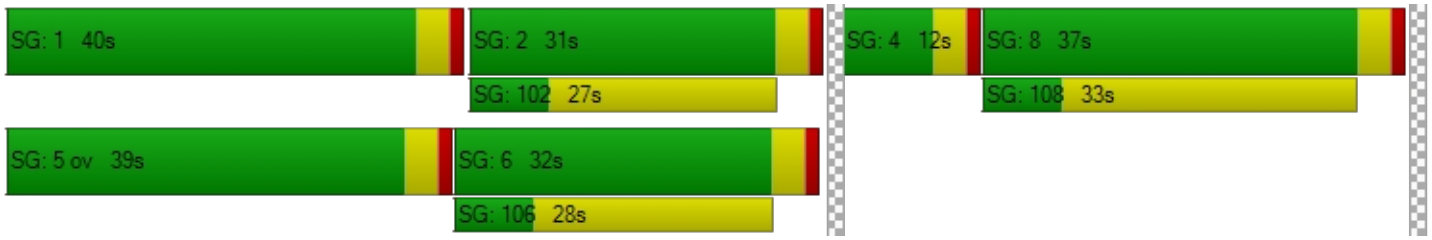
d_M, Delay for Movement [s/veh]	54.41	55.86	54.46	57.66	53.85	25.80	44.01	9.73	9.70	64.89	23.68	23.60
Movement LOS	D	E	D	E	D	C	D	A	A	E	C	C
d_A, Approach Delay [s/veh]	54.62			30.25			29.03			28.44		
Approach LOS	D			C			C			C		
d_I, Intersection Delay [s/veh]	31.81											
Intersection LOS	C											
Intersection V/C	0.786											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.54	49.54	0.00	49.54
l_p,int, Pedestrian LOS Score for Intersection	2.407	2.593	0.000	2.602
Crosswalk LOS	B	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	550	133	450	466
d_b, Bicycle Delay [s]	31.57	52.30	36.07	35.30
l_b,int, Bicycle LOS Score for Intersection	2.083	2.095	2.602	2.224
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 10: Harbor Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	52.7
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.895

Intersection Setup

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	719	989	282	246	896	315	371	1287	391	368	1390	231
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	719	989	282	246	896	315	371	1287	391	368	1390	231
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	180	247	71	62	224	79	93	322	98	92	348	58
Total Analysis Volume [veh/h]	719	989	282	246	896	315	371	1287	391	368	1390	231
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	25	49	0	14	38	0	17	42	0	15	40	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	31	0	0	28	0	0	31	0	0	29	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	21	35	35	10	24	24	13	48	48	11	46	46
g / C, Green / Cycle	0.18	0.29	0.29	0.08	0.20	0.20	0.11	0.40	0.40	0.09	0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.21	0.17	0.15	0.07	0.16	0.17	0.11	0.30	0.28	0.11	0.24	0.12
s, saturation flow rate [veh/h]	3500	5700	1900	3500	5700	1900	3500	3800	1900	3500	5700	1900
c, Capacity [veh/h]	614	1679	560	296	1161	387	383	1501	750	325	2157	719
d1, Uniform Delay [s]	49.53	36.17	35.10	54.14	45.19	45.66	53.30	31.39	30.72	54.49	30.69	26.42
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.15	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	81.15	0.33	0.70	6.00	1.12	5.77	15.30	3.64	5.88	68.70	1.50	1.18
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.17	0.59	0.50	0.83	0.77	0.81	0.97	0.76	0.72	1.13	0.64	0.32
d, Delay for Lane Group [s/veh]	130.67	36.50	35.81	60.14	46.31	51.42	68.59	35.03	36.60	123.19	32.19	27.60
Lane Group LOS	F	D	D	E	D	D	E	D	D	F	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	16.08	8.28	6.94	3.91	8.51	9.56	6.38	14.79	14.25	8.00	11.22	4.92
50th-Percentile Queue Length [ft/ln]	402.12	207.06	173.56	97.68	212.79	239.03	159.54	369.63	356.30	200.07	280.48	123.06
95th-Percentile Queue Length [veh/ln]	24.44	13.00	11.26	7.03	13.30	14.63	10.52	21.09	20.44	13.22	16.71	8.56
95th-Percentile Queue Length [ft/ln]	610.89	325.05	281.59	175.82	332.40	365.80	263.11	527.28	511.08	330.43	417.81	214.02

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	130.67	36.50	35.81	60.14	46.31	51.42	68.59	35.21	36.60	123.19	32.19	27.60
Movement LOS	F	D	D	E	D	D	E	D	D	F	C	C
d_A, Approach Delay [s/veh]	70.43			49.75			41.52			48.49		
Approach LOS	E			D			D			D		
d_I, Intersection Delay [s/veh]	52.66											
Intersection LOS	D											
Intersection V/C	0.895											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.54	49.54	49.54	49.54
l_p,int, Pedestrian LOS Score for Intersection	3.258	3.193	3.284	3.275
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	750	566	633	600
d_b, Bicycle Delay [s]	23.46	30.85	28.04	29.43
l_b,int, Bicycle LOS Score for Intersection	2.654	2.361	2.687	2.654
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 11: Puente Street at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	13.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.475

Intersection Setup

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	28	33	107	184	46	134	86	1423	39	84	1461	242
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	28	33	107	184	46	134	86	1423	39	84	1461	242
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	8	27	46	12	34	22	356	10	21	365	61
Total Analysis Volume [veh/h]	28	33	107	184	46	134	86	1423	39	84	1461	242
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	38	0	0	38	0	18	31	0	21	34	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	23	0	0	17	0	0	23	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	12	12	12	12	12	6	61	61	6	61	61
g / C, Green / Cycle	0.13	0.13	0.13	0.13	0.13	0.13	0.06	0.68	0.68	0.06	0.67	0.67
(v / s)_i Volume / Saturation Flow Rate	0.02	0.02	0.06	0.10	0.01	0.07	0.05	0.25	0.26	0.05	0.26	0.13
s, saturation flow rate [veh/h]	1800	1900	1900	1800	3800	1900	1800	3800	1900	1800	5700	1900
c, Capacity [veh/h]	263	247	247	254	494	247	115	2561	1281	113	3836	1279
d1, Uniform Delay [s]	34.63	34.69	36.13	37.97	34.51	36.68	41.46	6.41	6.49	41.51	6.48	5.52
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.18	0.24	1.20	3.88	0.08	1.85	9.30	0.42	0.89	9.29	0.29	0.33
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.11	0.13	0.43	0.72	0.09	0.54	0.75	0.38	0.39	0.74	0.38	0.19
d, Delay for Lane Group [s/veh]	34.81	34.94	37.32	41.85	34.59	38.53	50.75	6.83	7.38	50.81	6.77	5.85
Lane Group LOS	C	C	D	D	C	D	D	A	A	D	A	A
Critical Lane Group	No	No	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.55	0.65	2.22	4.15	0.45	2.85	2.15	3.53	3.86	2.11	3.55	1.58
50th-Percentile Queue Length [ft/ln]	13.75	16.28	55.60	103.63	11.13	71.25	53.83	88.13	96.46	52.63	88.70	39.40
95th-Percentile Queue Length [veh/ln]	0.99	1.17	4.00	7.46	0.80	5.13	3.88	6.35	6.95	3.79	6.39	2.84
95th-Percentile Queue Length [ft/ln]	24.76	29.30	100.08	186.54	20.04	128.26	96.89	158.63	173.63	94.73	159.67	70.91

Movement, Approach, & Intersection Results

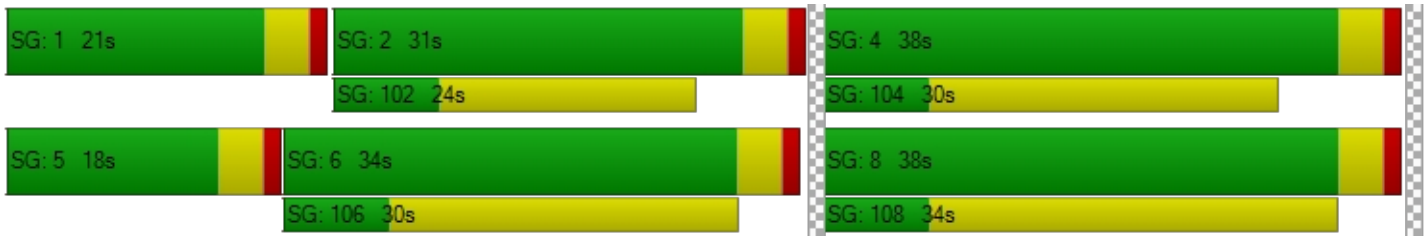
d_M, Delay for Movement [s/veh]	34.81	34.94	37.32	41.85	34.59	38.53	50.75	7.01	7.38	50.81	6.77	5.85
Movement LOS	C	C	D	D	C	D	D	A	A	D	A	A
d_A, Approach Delay [s/veh]	36.44			39.71			9.45			8.71		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	13.13											
Intersection LOS	B											
Intersection V/C	0.475											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.70	34.70	34.70	34.70
l_p,int, Pedestrian LOS Score for Intersection	2.365	2.441	3.075	3.413
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	755	755	600	666
d_b, Bicycle Delay [s]	17.44	17.44	22.07	20.02
l_b,int, Bicycle LOS Score for Intersection	1.837	1.860	2.411	2.542
Bicycle LOS	A	A	B	B

Sequence

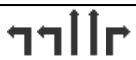
Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: Brea Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	44.2
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.865

Intersection Setup

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	451	669	300	490	984	274	296	1448	302	378	1479	435
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	451	669	300	490	984	274	296	1448	302	378	1479	435
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	113	167	75	123	246	69	74	362	76	95	370	109
Total Analysis Volume [veh/h]	451	669	300	490	984	274	296	1448	302	378	1479	435
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	20	41	0	21	42	0	15	41	0	17	43	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	30	0	0	28	0	0	30	0	0	30	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	16	33	33	17	34	34	11	41	41	13	43	43
g / C, Green / Cycle	0.13	0.28	0.28	0.14	0.29	0.29	0.09	0.34	0.34	0.11	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.13	0.12	0.16	0.14	0.26	0.14	0.08	0.25	0.16	0.11	0.26	0.23
s, saturation flow rate [veh/h]	3500	5700	1900	3500	3800	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	469	1574	525	498	1081	540	325	1932	644	383	2026	675
d1, Uniform Delay [s]	51.69	35.65	37.37	51.37	41.50	35.94	54.00	35.18	31.21	53.42	33.69	32.36
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	12.07	0.18	0.98	15.22	3.38	0.74	9.86	2.72	2.44	18.70	2.36	4.69
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.96	0.43	0.57	0.98	0.91	0.51	0.91	0.75	0.47	0.99	0.73	0.64
d, Delay for Lane Group [s/veh]	63.77	35.84	38.35	66.59	44.88	36.68	63.86	37.91	33.65	72.12	36.05	37.04
Lane Group LOS	E	D	D	E	D	D	E	D	C	E	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	7.52	5.39	7.71	8.38	14.42	6.82	4.87	12.88	7.32	6.68	12.83	11.38
50th-Percentile Queue Length [ft/ln]	187.97	134.79	192.71	209.58	360.53	170.52	121.83	322.07	182.90	167.00	320.70	284.38
95th-Percentile Queue Length [veh/ln]	12.02	9.20	12.26	13.13	20.65	11.10	8.49	18.77	11.75	10.92	18.70	16.91
95th-Percentile Queue Length [ft/ln]	300.40	229.99	306.54	328.30	516.22	277.60	212.34	469.23	293.80	272.97	467.54	422.66

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	63.77	35.84	38.35	66.59	44.88	36.68	63.86	37.91	33.65	72.12	36.05	37.04
Movement LOS	E	D	D	E	D	D	E	D	C	E	D	D
d_A, Approach Delay [s/veh]	45.24			49.68			41.03			42.19		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	44.19											
Intersection LOS	D											
Intersection V/C	0.865											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.54	49.54	49.54	49.54
l_p,int, Pedestrian LOS Score for Intersection	3.115	3.123	3.323	3.354
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	616	633	616	650
d_b, Bicycle Delay [s]	28.73	28.04	28.73	27.37
l_b,int, Bicycle LOS Score for Intersection	2.341	3.002	2.685	2.820
Bicycle LOS	B	C	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 13: Randolph Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	42.4
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.888

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	107	49	209	441	90	314	338	1684	68	151	1996	497
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	107	49	209	441	90	314	338	1684	68	151	1996	497
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	12	52	110	23	79	85	421	17	38	499	124
Total Analysis Volume [veh/h]	107	49	209	441	90	314	338	1684	68	151	1996	497
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	15	0	0	40	0	17	49	0	16	48	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	29	0	0	28	0	0	29	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	15	15	29	29	13	48	48	12	47	47
g / C, Green / Cycle	0.13	0.13	0.13	0.24	0.24	0.11	0.40	0.40	0.10	0.39	0.39
(v / s)_i Volume / Saturation Flow Rate	0.06	0.03	0.11	0.13	0.21	0.10	0.30	0.31	0.08	0.35	0.26
s, saturation flow rate [veh/h]	1800	1800	1900	3500	1900	3500	3800	1900	1800	5700	1900
c, Capacity [veh/h]	230	230	243	836	454	381	1524	762	178	2231	744
d1, Uniform Delay [s]	48.56	46.96	51.32	39.80	44.18	52.77	30.93	31.39	53.18	34.21	30.11
k, delay calibration	0.11	0.11	0.11	0.11	0.24	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.46	0.46	8.73	0.52	12.50	7.06	3.58	7.89	10.44	6.07	4.73
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.47	0.21	0.86	0.53	0.89	0.89	0.76	0.78	0.85	0.89	0.67
d, Delay for Lane Group [s/veh]	50.03	47.41	60.05	40.32	56.69	59.83	34.50	39.28	63.63	40.28	34.83
Lane Group LOS	D	D	E	D	E	E	C	D	E	D	C
Critical Lane Group	No	No	Yes	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.07	1.35	6.74	5.74	13.12	5.39	14.92	16.52	4.99	19.06	12.68
50th-Percentile Queue Length [ft/ln]	76.87	33.73	168.56	143.43	328.04	134.85	372.91	413.05	124.86	476.45	317.00
95th-Percentile Queue Length [veh/ln]	5.53	2.43	11.00	9.67	19.06	9.20	21.25	23.19	8.66	26.22	18.52
95th-Percentile Queue Length [ft/ln]	138.36	60.71	275.02	241.64	476.56	230.07	531.26	579.70	216.49	655.43	463.00

Movement, Approach, & Intersection Results

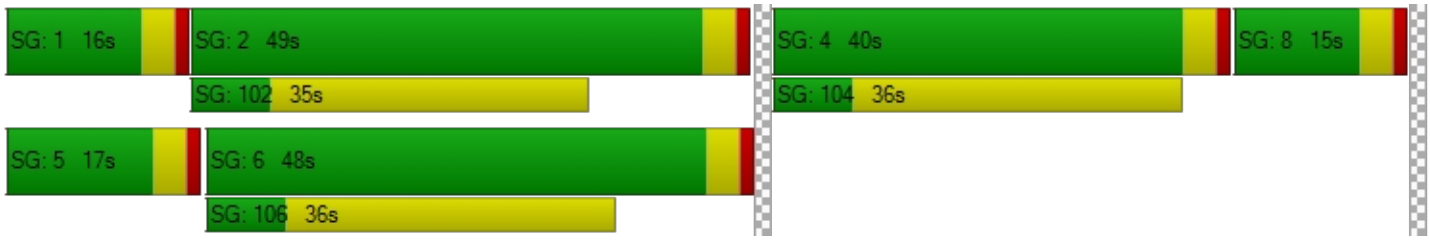
d_M, Delay for Movement [s/veh]	50.03	47.41	60.05	40.32	56.69	56.69	59.83	36.00	39.28	63.63	40.28	34.83
Movement LOS	D	D	E	D	E	E	E	D	D	E	D	C
d_A, Approach Delay [s/veh]	55.42			48.15			39.96			40.59		
Approach LOS	E			D			D			D		
d_I, Intersection Delay [s/veh]	42.35											
Intersection LOS	D											
Intersection V/C	0.888											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.52	49.52	49.52	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.309	2.651	3.289	0.000
Crosswalk LOS	B	B	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	183	600	750	733
d_b, Bicycle Delay [s]	49.52	29.41	23.45	24.08
l_b,int, Bicycle LOS Score for Intersection	1.861	2.954	2.709	3.014
Bicycle LOS	A	C	B	C

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 14: State College Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	134.5
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.369

Intersection Setup

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	326	655	780	617	442	195	146	1770	239	699	2190	1155
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	326	655	780	617	442	195	146	1770	239	699	2190	1155
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	82	164	195	154	111	49	37	443	60	175	548	289
Total Analysis Volume [veh/h]	326	655	780	617	442	195	146	1770	239	699	2190	1155
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	28	41	0	26	39	0	10	34	0	19	43	43
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	30	0	0	28	0	0	23	0	0	23	23
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	14	37	37	22	45	45	6	30	30	15	39	65
g / C, Green / Cycle	0.11	0.31	0.31	0.18	0.38	0.38	0.05	0.25	0.25	0.13	0.33	0.54
(v / s)_i Volume / Saturation Flow Rate	0.09	0.17	0.41	0.31	0.18	0.16	0.04	0.26	0.27	0.20	0.38	0.61
s, saturation flow rate [veh/h]	3500	3800	1900	2000	1900	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	399	1166	583	367	715	715	176	1433	478	438	1859	1032
d1, Uniform Delay [s]	51.96	34.85	41.61	49.01	28.34	27.78	56.48	44.93	44.93	52.50	40.44	27.43
k, delay calibration	0.11	0.11	0.50	0.17	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.16	0.43	163.63	310.94	0.48	0.40	9.46	37.12	59.84	270.11	86.04	66.99
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.82	0.56	1.34	1.68	0.47	0.42	0.83	1.05	1.07	1.60	1.18	1.12
d, Delay for Lane Group [s/veh]	56.12	35.28	205.23	359.95	28.81	28.18	65.94	82.05	104.77	322.62	126.48	94.42
Lane Group LOS	E	D	F	F	C	C	E	F	F	F	F	F
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.02	8.06	43.47	21.31	7.35	6.52	2.42	19.02	22.03	23.02	32.84	47.12
50th-Percentile Queue Length [ft/ln]	125.56	201.59	1086.85	532.73	183.72	162.98	60.60	475.43	550.77	575.61	820.88	1177.92
95th-Percentile Queue Length [veh/ln]	8.70	12.72	64.07	35.00	11.79	10.71	4.36	26.90	30.89	36.34	46.82	63.91
95th-Percentile Queue Length [ft/ln]	217.44	318.02	1601.84	875.06	294.87	267.67	109.09	672.51	772.30	908.62	1170.51	1597.80

Movement, Approach, & Intersection Results

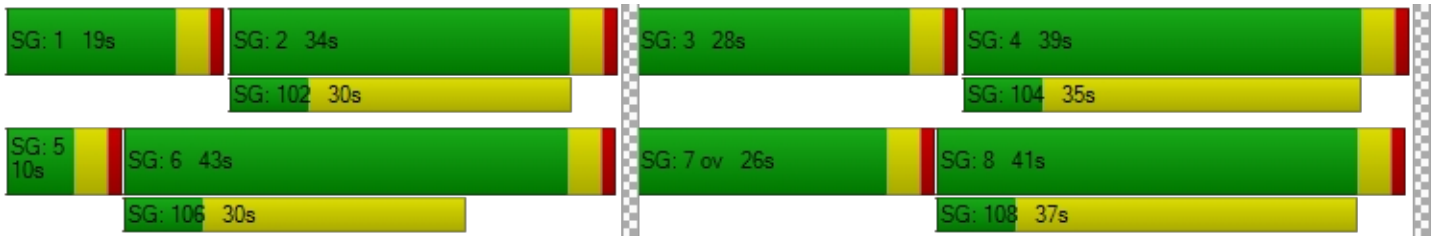
d_M, Delay for Movement [s/veh]	56.12	35.28	205.23	359.95	28.66	28.18	65.94	85.52	104.77	322.62	126.48	94.42
Movement LOS	E	D	F	F	C	C	E	F	F	F	F	F
d_A, Approach Delay [s/veh]	114.42			191.59			86.33			151.23		
Approach LOS	F			F			F			F		
d_I, Intersection Delay [s/veh]	134.51											
Intersection LOS	F											
Intersection V/C	1.369											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.51	49.51	49.51	49.51
l_p,int, Pedestrian LOS Score for Intersection	3.045	2.988	3.390	3.683
Crosswalk LOS	C	C	C	D
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	617	583	500	650
d_b, Bicycle Delay [s]	28.71	30.11	33.76	27.34
l_b,int, Bicycle LOS Score for Intersection	3.012	2.594	2.449	3.784
Bicycle LOS	C	B	B	D

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 15: SR-57 SB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	20.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.838

Intersection Setup

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	0	0	0	581	0	831	0	2335	1242	0	2860	367
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	581	0	831	0	2335	1242	0	2860	367
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	145	0	208	0	584	311	0	715	92
Total Analysis Volume [veh/h]	0	0	0	581	0	831	0	2335	1242	0	2860	367
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	7	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	6	0	0	0	6	0	0	6	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	74	0	0	0	26	0	0	26	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	15	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	C
C, Cycle Length [s]		100	100	100	100	100
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		32	32	32	60	60
g / C, Green / Cycle		0.32	0.32	0.32	0.60	0.60
(v / s)_i Volume / Saturation Flow Rate		0.27	0.27	0.25	0.41	0.50
s, saturation flow rate [veh/h]		1750	1750	1900	5700	5700
c, Capacity [veh/h]		553	553	601	3441	3441
d1, Uniform Delay [s]		31.94	31.94	31.04	13.28	15.74
k, delay calibration		0.11	0.11	0.11	0.50	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		3.79	3.79	2.29	1.10	2.49
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.85	0.85	0.78	0.68	0.83
d, Delay for Lane Group [s/veh]		35.73	35.73	33.33	14.38	18.23
Lane Group LOS		D	D	C	B	B
Critical Lane Group		Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]		10.94	10.94	10.45	11.06	16.34
50th-Percentile Queue Length [ft/ln]		273.51	273.51	261.19	276.58	408.57
95th-Percentile Queue Length [veh/ln]		16.36	16.36	15.75	16.52	22.97
95th-Percentile Queue Length [ft/ln]		409.12	409.12	393.71	412.95	574.31

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	35.73	0.00	34.37	0.00	14.38	0.00	0.00	18.23	0.00
Movement LOS				D		C		B			B	
d_A, Approach Delay [s/veh]	0.00			34.93			14.38			18.23		
Approach LOS	A			C			B			B		
d_I, Intersection Delay [s/veh]	20.44											
Intersection LOS	C											
Intersection V/C	0.838											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	39.57	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	2.480	0.000	0.000
Crosswalk LOS	F	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1401	440	440
d_b, Bicycle Delay [s]	49.97	4.48	30.39	30.39
l_b,int, Bicycle LOS Score for Intersection	4.132	3.889	2.844	3.133
Bicycle LOS	D	D	C	C

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 16: SR-57 NB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	42.5
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.947

Intersection Setup

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	1568	117	638	0	0	371	388	2085	690	0	2220	60
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1568	117	638	0	0	371	388	2085	690	0	2220	60
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	392	29	160	0	0	93	97	521	173	0	555	15
Total Analysis Volume [veh/h]	1568	117	638	0	0	371	388	2085	690	0	2220	60
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Overlap	Protecte	Permiss	Unsigna	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	0	5	5	2	0	0	6	0
Auxiliary Signal Groups						5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	6	0	0	0	6	6	6	0	0	6	0
Maximum Green [s]	0	30	0	0	0	30	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	1.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	47	0	0	0	32	32	73	0	0	41	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	22	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No				No		No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No				No	No	No			No	
Maximum Recall		No				No	No	No			No	
Pedestrian Recall		No				No	No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	R	L	C	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	43	43	43	28	28	69	38	38
g / C, Green / Cycle	0.36	0.36	0.36	0.23	0.23	0.58	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.33	0.34	0.31	0.10	0.22	0.37	0.30	0.30
s, saturation flow rate [veh/h]	3500	1750	1900	3800	1800	5700	5700	1900
c, Capacity [veh/h]	1242	621	674	872	413	3297	1799	600
d1, Uniform Delay [s]	37.08	37.63	36.18	39.45	45.38	16.80	40.13	40.13
k, delay calibration	0.11	0.42	0.36	0.11	0.35	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.35	22.73	11.26	0.33	24.70	0.93	12.38	26.42
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.92	0.95	0.87	0.43	0.94	0.63	0.95	0.95
d, Delay for Lane Group [s/veh]	40.44	60.36	47.43	39.78	70.07	17.74	52.51	66.55
Lane Group LOS	D	E	D	D	E	B	D	E
Critical Lane Group	No	Yes	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	16.40	20.45	18.00	4.72	14.10	12.52	18.29	20.63
50th-Percentile Queue Length [ft/ln]	410.00	511.37	450.11	118.10	352.61	313.10	457.33	515.78
95th-Percentile Queue Length [veh/ln]	23.04	27.87	24.96	8.29	20.26	18.33	25.31	28.08
95th-Percentile Queue Length [ft/ln]	576.04	696.81	624.08	207.21	506.59	458.19	632.69	702.01

Movement, Approach, & Intersection Results

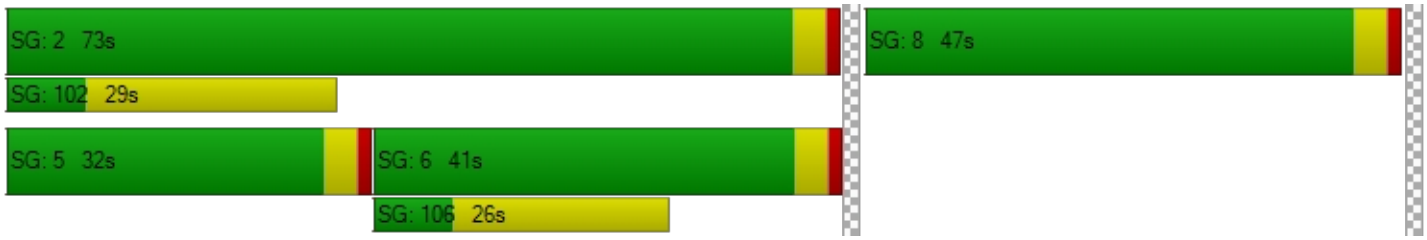
d_M, Delay for Movement [s/veh]	45.72	60.36	48.59	0.00	0.00	39.78	70.07	17.74	0.00	0.00	55.74	66.55
Movement LOS	D	E	D			D	E	B			E	E
d_A, Approach Delay [s/veh]	47.27			39.78			25.95			56.02		
Approach LOS	D			D			C			E		
d_I, Intersection Delay [s/veh]	42.49											
Intersection LOS	D											
Intersection V/C	0.947											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.49	49.49	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.767	2.258	0.000	0.000
Crosswalk LOS	C	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	717	467	1150	617
d_b, Bicycle Delay [s]	24.69	35.25	10.83	28.69
l_b,int, Bicycle LOS Score for Intersection	5.393	1.560	2.920	2.500
Bicycle LOS	F	A	C	B

Sequence

Ring 1	-	2	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 17: Associated Road at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	35.9
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.827

Intersection Setup

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	260	198	141	320	254	203	253	2001	265	191	1835	227
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	260	198	141	320	254	203	253	2001	265	191	1835	227
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	65	50	35	80	64	51	63	500	66	48	459	57
Total Analysis Volume [veh/h]	260	198	141	320	254	203	253	2001	265	191	1835	227
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	39	0	17	42	0	28	45	0	19	36	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	28	0	0	29	0	0	26	0	0	25	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	10	16	16	13	19	19	19	61	61	15	56	56
g / C, Green / Cycle	0.08	0.13	0.13	0.11	0.16	0.16	0.16	0.51	0.51	0.12	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.07	0.09	0.08	0.09	0.13	0.11	0.14	0.39	0.40	0.11	0.27	0.28
s, saturation flow rate [veh/h]	3500	1900	1900	3500	1900	1900	1800	3800	1900	1800	5700	1900
c, Capacity [veh/h]	294	253	253	375	297	297	283	1919	960	219	2675	892
d1, Uniform Delay [s]	54.42	49.85	49.25	52.66	49.33	47.85	49.60	24.29	24.63	51.84	23.15	23.37
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.13	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.72	3.72	2.57	5.53	7.00	2.78	11.21	3.25	6.89	10.41	0.90	2.85
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.88	0.71	0.63	0.85	0.86	0.68	0.89	0.78	0.80	0.87	0.57	0.59
d, Delay for Lane Group [s/veh]	63.14	53.57	51.82	58.19	56.33	50.63	60.81	27.54	31.52	62.25	24.06	26.22
Lane Group LOS	E	D	D	E	E	D	E	C	C	E	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.24	5.44	4.69	5.02	7.98	5.97	8.31	17.72	19.28	6.28	10.60	11.44
50th-Percentile Queue Length [ft/ln]	106.03	136.00	117.36	125.59	199.54	149.22	207.63	442.90	481.92	156.91	264.98	286.01
95th-Percentile Queue Length [veh/ln]	7.62	9.27	8.25	8.70	12.61	9.98	13.03	24.62	26.48	10.39	15.94	16.99
95th-Percentile Queue Length [ft/ln]	190.47	231.63	206.19	217.49	315.37	249.38	325.79	615.47	661.93	259.63	398.46	424.68

Movement, Approach, & Intersection Results

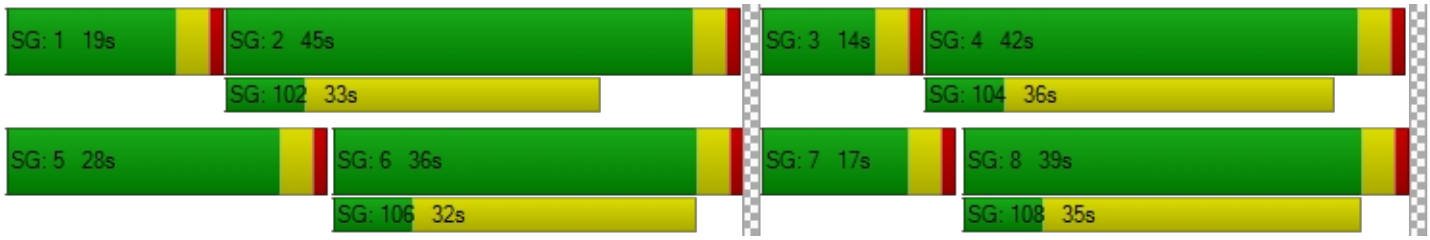
d_M, Delay for Movement [s/veh]	63.14	53.41	51.82	58.19	56.33	50.63	60.81	28.54	31.52	62.25	24.41	26.22
Movement LOS	E	D	D	E	E	D	E	C	C	E	C	C
d_A, Approach Delay [s/veh]	57.26			55.61			32.09			27.80		
Approach LOS	E			E			C			C		
d_I, Intersection Delay [s/veh]	35.94											
Intersection LOS	D											
Intersection V/C	0.827											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.52	49.52	49.52	49.52
l_p,int, Pedestrian LOS Score for Intersection	2.569	2.703	3.326	3.314
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	583	633	683	533
d_b, Bicycle Delay [s]	30.12	28.03	26.02	32.28
l_b,int, Bicycle LOS Score for Intersection	2.054	2.842	2.945	2.489
Bicycle LOS	B	C	C	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 18: Castlegate Lane/Placentia Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	23.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.807

Intersection Setup

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	206	18	276	28	12	13	26	2142	314	228	2171	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	206	18	276	28	12	13	26	2142	314	228	2171	50
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	52	5	69	7	3	3	7	536	79	57	543	13
Total Analysis Volume [veh/h]	206	18	276	28	12	13	26	2142	314	228	2171	50
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	26	0	0	10	0	10	32	0	22	44	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	15	0	0	0	0	0	21	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	16	16	16	4	4	3	41	41	13	51	51
g / C, Green / Cycle	0.17	0.17	0.17	0.05	0.05	0.03	0.45	0.45	0.15	0.57	0.57
(v / s)_i Volume / Saturation Flow Rate	0.06	0.06	0.15	0.02	0.01	0.01	0.38	0.17	0.13	0.38	0.40
s, saturation flow rate [veh/h]	1750	1750	1900	1800	1900	1800	5700	1900	1800	3800	1900
c, Capacity [veh/h]	304	304	330	90	96	60	2562	854	268	2148	1074
d1, Uniform Delay [s]	32.88	32.90	36.02	41.31	41.21	42.76	21.89	16.37	37.38	13.83	14.22
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.74	0.75	5.59	1.91	1.44	4.88	3.43	1.22	7.37	1.75	3.97
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.37	0.37	0.84	0.31	0.26	0.43	0.84	0.37	0.85	0.68	0.71
d, Delay for Lane Group [s/veh]	33.62	33.65	41.60	43.23	42.65	47.64	25.32	17.59	44.75	15.59	18.19
Lane Group LOS	C	C	D	D	D	D	C	B	D	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.18	2.20	6.26	0.64	0.57	0.64	13.24	4.38	5.36	9.96	11.31
50th-Percentile Queue Length [ft/ln]	54.58	55.03	156.47	16.06	14.19	16.10	330.99	109.41	133.99	248.91	282.69
95th-Percentile Queue Length [veh/ln]	3.93	3.96	10.36	1.16	1.02	1.16	19.21	7.81	9.16	15.13	16.82
95th-Percentile Queue Length [ft/ln]	98.24	99.06	259.04	28.91	25.54	28.97	480.18	195.18	228.90	378.28	420.56

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	33.63	33.65	41.60	43.23	42.65	42.65	47.64	25.32	17.59	44.75	16.44	18.19
Movement LOS	C	C	D	D	D	D	D	C	B	D	B	B
d_A, Approach Delay [s/veh]	38.03			42.95			24.58			19.11		
Approach LOS	D			D			C			B		
d_I, Intersection Delay [s/veh]	23.54											
Intersection LOS	C											
Intersection V/C	0.807											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.72	34.72	0.00	34.72
I_p,int, Pedestrian LOS Score for Intersection	2.388	1.988	0.000	3.275
Crosswalk LOS	B	A	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	488	133	622	888
d_b, Bicycle Delay [s]	25.73	39.24	21.40	13.92
I_b,int, Bicycle LOS Score for Intersection	2.385	1.647	2.925	2.907
Bicycle LOS	B	A	C	C

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

APPENDIX D-VI

YEAR 2045 PLUS PROJECT TRAFFIC CONDITIONS

Brea Mall Expansion, Brea

Vistro File: N:\...\4099 HCM Network.vistro
Report File: N:\...\AM 2045+P.pdf

Scenario 13 AM 2045+P
4/12/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State College Boulevard at Lambert Road	Signalized	HCM 6th Edition	NB Thru	0.898	40.2	D
2	SR-57 SB Ramps at Lambert Road	Signalized	HCM 6th Edition	WB Left	0.840	24.4	C
3	SR-57 NB Ramps at Lambert Road	Signalized	HCM 6th Edition	NB Left	0.884	22.1	C
4	Randolph Avenue at Birch Street	Signalized	HCM 6th Edition	WB Left	0.353	14.4	B
5	State College Boulevard at Birch Street	Signalized	HCM 6th Edition	EB Left	0.648	40.5	D
6	S Associated Road at Birch Street	Signalized	HCM 6th Edition	EB Left	0.781	26.8	C
7	Randolph Avenue at Madison Way	Signalized	HCM 6th Edition	SB Left	0.108	14.5	B
8	Randolph Avenue at Brea Mall	Signalized	HCM 6th Edition	EB Left	0.149	13.5	B
9	Brea Mall South at State College Boulevard	Signalized	HCM 6th Edition	WB Left	0.282	17.1	B
10	Harbor Boulevard at Imperial Highway	Signalized	HCM 6th Edition	NB Left	1.029	58.2	E
11	Puente Street at Imperial Highway	Signalized	HCM 6th Edition	SB Left	0.669	21.2	C
12	Brea Boulevard at Imperial Highway	Signalized	HCM 6th Edition	WB Left	0.948	46.9	D
13	Randolph Avenue at Imperial Highway	Signalized	HCM 6th Edition	WB Left	0.550	15.1	B
14	State College Boulevard at Imperial Highway	Signalized	HCM 6th Edition	SB Left	0.867	37.5	D
15	SR-57 SB Ramps at Imperial Highway	Signalized	HCM 6th Edition	SB Left	0.690	15.9	B
16	SR-57 NB Ramps at Imperial Highway	Signalized	HCM 6th Edition	NB Thru	0.688	25.4	C
17	Associated Road at Imperial Highway	Signalized	HCM 6th Edition	WB Left	0.846	33.3	C
18	Castlegate Lane/Placentia	Signalized	HCM 6th	EB Left	0.737	18.8	B

16	Avenue at Imperial Highway	Signalized	Edition	EB Left	0.757	18.8	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: State College Boulevard at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	40.2
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.898

Intersection Setup

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	194	250	235	1011	691	9	16	1594	238	541	2035	627
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	194	250	235	1011	691	9	16	1594	238	541	2035	627
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	63	59	253	173	2	4	399	60	135	509	157
Total Analysis Volume [veh/h]	194	250	235	1011	691	9	16	1594	238	541	2035	627
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	13	16	0	41	44	0	14	39	0	24	49	49
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	0	0	0	33	0	0	28	0	0	22	22
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	9	12	12	12	37	40	40	3	35	35	20	52	93
g / C, Green / Cycle	0.07	0.10	0.10	0.10	0.31	0.34	0.34	0.02	0.29	0.29	0.17	0.44	0.78
(v / s)_i Volume / Saturation Flow Rate	0.06	0.09	0.08	0.08	0.29	0.18	0.18	0.00	0.24	0.24	0.15	0.36	0.33
s, saturation flow rate [veh/h]	3500	1900	1900	1900	3500	1900	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	252	197	197	197	1068	641	641	76	1657	552	584	2486	1472
d1, Uniform Delay [s]	54.75	53.07	52.66	52.34	40.75	32.34	32.32	57.73	39.76	39.88	49.28	29.69	4.55
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.13	0.13	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.97	12.07	7.87	5.94	5.28	0.85	0.84	1.37	4.88	13.89	6.91	3.15	0.90
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77	0.88	0.81	0.76	0.95	0.55	0.55	0.21	0.83	0.83	0.93	0.82	0.43
d, Delay for Lane Group [s/veh]	59.72	65.15	60.53	58.28	46.04	33.19	33.17	59.10	44.64	53.76	56.19	32.84	5.46
Lane Group LOS	E	E	E	E	D	C	C	E	D	D	E	C	A
Critical Lane Group	No	Yes	No	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.06	5.84	5.17	4.73	15.20	8.41	8.39	0.25	13.23	14.77	8.53	17.49	4.68
50th-Percentile Queue Length [ft/ln]	76.41	146.0	129.2	118.2	380.04	210.19	209.66	6.34	330.73	369.23	213.16	437.19	116.93
95th-Percentile Queue Length [veh/ln]	5.50	9.81	8.90	8.30	21.60	13.16	13.14	0.46	19.19	21.07	13.32	24.35	8.22
95th-Percentile Queue Length [ft/ln]	137.5	245.1	222.4	207.3	539.89	329.07	328.40	11.41	479.85	526.80	332.88	608.64	205.61

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	59.72	63.75	59.02	46.04	33.18	33.17	59.10	45.92	53.76	56.19	32.84	5.46
Movement LOS	E	E	E	D	C	C	E	D	D	E	C	A
d_A, Approach Delay [s/veh]	60.99			40.78			47.04			31.42		
Approach LOS	E			D			D			C		
d_I, Intersection Delay [s/veh]	40.15											
Intersection LOS	D											
Intersection V/C	0.898											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.52	49.52	49.52	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.907	2.890	3.306	0.000
Crosswalk LOS	C	C	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	200	666	583	750
d_b, Bicycle Delay [s]	48.62	26.68	30.12	23.45
l_b,int, Bicycle LOS Score for Intersection	2.120	2.971	2.322	3.321
Bicycle LOS	B	C	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: SR-57 SB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	24.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.840

Intersection Setup

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	0	0	0	1084	0	730	0	1953	650	285	2286	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	1084	0	730	0	1953	650	285	2286	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	271	0	183	0	488	163	71	572	0
Total Analysis Volume [veh/h]	0	0	0	1084	0	730	0	1953	650	285	2286	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	7	0	0	0	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	6	0	0	0	6	0	6	6	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	44	0	0	0	38	0	13	51	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	12	0	0	20	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall				No				No		No	No	
Maximum Recall				No				No		No	No	
Pedestrian Recall				No				No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	R	C	R	L	C
C, Cycle Length [s]		95	95	95	95	95	95
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		34	34	40	40	9	53
g / C, Green / Cycle		0.36	0.36	0.42	0.42	0.10	0.56
(v / s)_i Volume / Saturation Flow Rate		0.31	0.19	0.34	0.17	0.08	0.40
s, saturation flow rate [veh/h]		3500	3800	5700	3800	3500	5700
c, Capacity [veh/h]		1262	1370	2380	1587	335	3165
d1, Uniform Delay [s]		28.14	24.05	24.52	19.44	42.31	15.69
k, delay calibration		0.11	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		1.82	0.32	3.32	0.78	6.13	1.46
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.86	0.53	0.82	0.41	0.85	0.72
d, Delay for Lane Group [s/veh]		29.97	24.37	27.84	20.23	48.44	17.15
Lane Group LOS		C	C	C	C	D	B
Critical Lane Group		Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]		11.31	6.38	13.09	5.06	3.54	11.69
50th-Percentile Queue Length [ft/ln]		282.68	159.59	327.16	126.60	88.55	292.28
95th-Percentile Queue Length [veh/ln]		16.82	10.53	19.02	8.75	6.38	17.30
95th-Percentile Queue Length [ft/ln]		420.55	263.18	475.48	218.87	159.39	432.47

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	29.97	0.00	24.37	0.00	27.84	20.23	48.44	17.15	0.00
Movement LOS				C		C		C	C	D	B	
d_A, Approach Delay [s/veh]	0.00			27.71			25.94			20.62		
Approach LOS	A			C			C			C		
d_I, Intersection Delay [s/veh]	24.44											
Intersection LOS	C											
Intersection V/C	0.840											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	37.14	37.14	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.173	2.576	0.000	0.000
Crosswalk LOS	B	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	842	716	989
d_b, Bicycle Delay [s]	47.51	15.93	19.59	12.13
l_b,int, Bicycle LOS Score for Intersection	4.132	1.560	2.991	2.974
Bicycle LOS	D	A	C	C

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 3: SR-57 NB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	22.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.884

Intersection Setup

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			No			No			No		

Volumes

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	1104	0	534	0	0	0	0	2605	424	0	1458	530
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1104	0	534	0	0	0	0	2605	424	0	1458	530
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	276	0	134	0	0	0	0	651	106	0	365	0
Total Analysis Volume [veh/h]	1104	0	534	0	0	0	0	2605	424	0	1458	0
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Permiss	Split	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna
Signal Group	3	0	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	0	0	0	0	0	0	6	0	0	6	0
Maximum Green [s]	30	0	0	0	0	0	0	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	59	0	0	0	0	0	0	36	0	0	36	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	25	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R		C	C	R	C
C, Cycle Length [s]	95	95		95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	35	35		51	51	51	51
g / C, Green / Cycle	0.37	0.37		0.54	0.54	0.54	0.54
(v / s)_i Volume / Saturation Flow Rate	0.32	0.28		0.46	0.46	0.22	0.26
s, saturation flow rate [veh/h]	3500	1900		3800	1900	1900	5700
c, Capacity [veh/h]	1306	709		2062	1031	1031	3093
d1, Uniform Delay [s]	27.24	25.93		18.28	18.28	12.78	13.34
k, delay calibration	0.11	0.11		0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.59	1.65		4.39	8.35	1.21	0.52
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.75		0.84	0.84	0.41	0.47
d, Delay for Lane Group [s/veh]	28.83	27.58		22.68	26.63	13.99	13.86
Lane Group LOS	C	C		C	C	B	B
Critical Lane Group	Yes	No		Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	11.29	10.46		15.95	17.08	5.36	6.15
50th-Percentile Queue Length [ft/ln]	282.19	261.41		398.77	427.07	134.06	153.71
95th-Percentile Queue Length [veh/ln]	16.80	15.76		22.50	23.86	9.16	10.21
95th-Percentile Queue Length [ft/ln]	419.93	393.99		562.51	596.53	229.00	255.37

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.83	0.00	27.58	0.00	0.00	0.00	0.00	23.56	13.99	0.00	13.86	0.00
Movement LOS	C		C					C	B		B	
d_A, Approach Delay [s/veh]	28.42			0.00			22.59			13.86		
Approach LOS	C			A			C			B		
d_I, Intersection Delay [s/veh]	22.07											
Intersection LOS	C											
Intersection V/C	0.884											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	37.11	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.704	0.000	0.000	0.000
Crosswalk LOS	B	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1159	0	674	674
d_b, Bicycle Delay [s]	8.40	47.47	20.87	20.87
l_b,int, Bicycle LOS Score for Intersection	1.560	4.132	3.226	2.362
Bicycle LOS	A	D	C	B

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 4: Randolph Avenue at Birch Street

Control Type:	Signalized	Delay (sec / veh):	14.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.353

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Base Volume Input [veh/h]	36	46	101	86	39	37	43	656	108	85	597	61
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	36	46	101	86	39	37	43	656	108	85	597	61
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	12	25	22	10	9	11	164	27	21	149	15
Total Analysis Volume [veh/h]	36	46	101	86	39	37	43	656	108	85	597	61
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	38	0	0	38	0	10	30	0	22	42	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	25	0	0	19	0	0	18	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	7	7	7	7	4	65	65	6	67	67
g / C, Green / Cycle	0.08	0.08	0.08	0.08	0.08	0.04	0.73	0.73	0.06	0.74	0.74
(v / s)_i Volume / Saturation Flow Rate	0.02	0.02	0.05	0.05	0.04	0.02	0.21	0.20	0.05	0.16	0.03
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1800	1900	1900	1800	3800	1900
c, Capacity [veh/h]	119	149	149	146	149	81	1379	1379	112	2825	1412
d1, Uniform Delay [s]	39.03	39.20	40.39	40.17	39.84	42.06	4.26	4.21	41.54	3.52	3.07
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.42	1.16	5.32	3.74	2.69	5.26	0.52	0.48	9.83	0.17	0.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.30	0.31	0.68	0.59	0.51	0.53	0.28	0.27	0.76	0.21	0.04
d, Delay for Lane Group [s/veh]	40.45	40.36	45.72	43.91	42.54	47.32	4.77	4.69	51.37	3.69	3.12
Lane Group LOS	D	D	D	D	D	D	A	A	D	A	A
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.79	1.00	2.37	1.97	1.71	1.04	2.14	2.02	2.14	1.31	0.24
50th-Percentile Queue Length [ft/ln]	19.70	24.98	59.30	49.34	42.71	26.10	53.57	50.39	53.56	32.76	6.10
95th-Percentile Queue Length [veh/ln]	1.42	1.80	4.27	3.55	3.08	1.88	3.86	3.63	3.86	2.36	0.44
95th-Percentile Queue Length [ft/ln]	35.46	44.96	106.74	88.82	76.88	46.99	96.43	90.71	96.41	58.97	10.97

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.45	40.36	45.72	43.91	42.54	42.54	47.32	4.74	4.69	51.37	3.69	3.12
Movement LOS	D	D	D	D	D	D	D	A	A	D	A	A
d_A, Approach Delay [s/veh]	43.34			43.26			7.00			9.10		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	14.43											
Intersection LOS	B											
Intersection V/C	0.353											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	34.68	34.68
l_p,int, Pedestrian LOS Score for Intersection	2.232	2.041	2.639	2.832
Crosswalk LOS	B	B	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	755	755	578	844
d_b, Bicycle Delay [s]	17.43	17.43	22.77	15.03
l_b,int, Bicycle LOS Score for Intersection	1.862	1.827	2.225	2.173
Bicycle LOS	A	A	B	B

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 5: State College Boulevard at Birch Street

Control Type:	Signalized	Delay (sec / veh):	40.5
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.648

Intersection Setup

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Base Volume Input [veh/h]	88	176	118	776	974	254	125	582	68	104	664	338
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	88	176	118	776	974	254	125	582	68	104	664	338
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	44	30	194	244	64	31	146	17	26	166	85
Total Analysis Volume [veh/h]	88	176	118	776	974	254	125	582	68	104	664	338
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	10	39	0	32	61	0	11	39	0	10	38	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	28	0	0	30	0	0	28	0	0	26	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	20	20	28	42	42	6	50	50	6	50	50
g / C, Green / Cycle	0.05	0.17	0.17	0.23	0.35	0.35	0.05	0.42	0.42	0.05	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.03	0.05	0.06	0.22	0.32	0.32	0.04	0.15	0.04	0.03	0.17	0.18
s, saturation flow rate [veh/h]	3500	3800	1900	3500	1900	1900	3500	3800	1900	3500	3800	1900
c, Capacity [veh/h]	168	639	320	816	671	671	182	1581	791	172	1571	785
d1, Uniform Delay [s]	55.79	43.56	44.29	45.34	37.09	37.09	55.96	24.17	21.23	55.93	25.03	25.13
k, delay calibration	0.11	0.11	0.11	0.11	0.23	0.23	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.50	0.23	0.71	6.96	10.42	10.42	4.58	0.66	0.21	3.38	0.84	1.72
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.52	0.28	0.37	0.95	0.91	0.91	0.69	0.37	0.09	0.60	0.42	0.43
d, Delay for Lane Group [s/veh]	58.29	43.79	45.00	52.30	47.51	47.51	60.54	24.83	21.44	59.30	25.87	26.85
Lane Group LOS	E	D	D	D	D	D	E	C	C	E	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.36	2.31	3.19	12.10	18.89	18.89	1.98	5.84	1.21	1.63	6.88	7.22
50th-Percentile Queue Length [ft/ln]	34.03	57.87	79.78	302.39	472.15	472.15	49.46	145.90	30.37	40.65	172.03	180.52
95th-Percentile Queue Length [veh/ln]	2.45	4.17	5.74	17.80	26.01	26.01	3.56	9.80	2.19	2.93	11.18	11.63
95th-Percentile Queue Length [ft/ln]	61.26	104.17	143.61	444.98	650.33	650.33	89.02	244.95	54.67	73.16	279.57	290.70

Movement, Approach, & Intersection Results

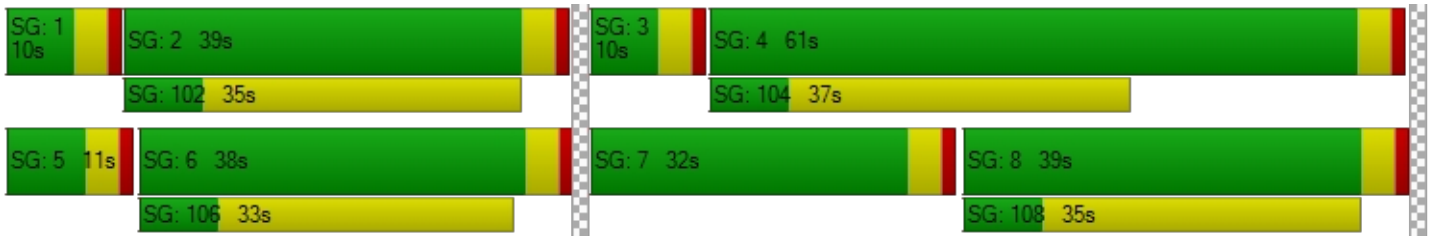
d_M, Delay for Movement [s/veh]	58.29	43.79	45.00	52.30	47.51	47.51	60.54	24.83	21.44	59.30	25.87	26.85
Movement LOS	E	D	D	D	D	D	E	C	C	E	C	C
d_A, Approach Delay [s/veh]	47.50			49.37			30.30			29.31		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	40.54											
Intersection LOS	D											
Intersection V/C	0.648											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.52	49.52	49.52	49.52
l_p,int, Pedestrian LOS Score for Intersection	2.821	2.896	2.856	2.967
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	583	950	583	567
d_b, Bicycle Delay [s]	30.12	16.55	30.12	30.83
l_b,int, Bicycle LOS Score for Intersection	1.875	3.213	2.199	2.472
Bicycle LOS	A	C	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: S Associated Road at Birch Street

Control Type:	Signalized	Delay (sec / veh):	26.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.781

Intersection Setup

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Base Volume Input [veh/h]	286	7	364	63	34	11	5	1105	374	405	898	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	286	7	364	63	34	11	5	1105	374	405	898	11
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	72	2	91	16	9	3	1	276	94	101	225	3
Total Analysis Volume [veh/h]	286	7	364	63	34	11	5	1105	374	405	898	11
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	8	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups			1,8									
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	6	0	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	30	0	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	23	60	60	0	37	0	10	38	0	22	50	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	26	26	0	26	0	0	27	0	0	26	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No		No		No	No		No	No	
Maximum Recall	No	No	No		No		No	No		No	No	
Pedestrian Recall	No	No	No		No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	22	44	6	6	1	68	68	18	85	85
g / C, Green / Cycle	0.10	0.19	0.37	0.05	0.05	0.01	0.56	0.56	0.15	0.71	0.71
(v / s)_i Volume / Saturation Flow Rate	0.08	0.00	0.19	0.04	0.02	0.00	0.40	0.38	0.12	0.24	0.24
s, saturation flow rate [veh/h]	3500	1900	1900	1800	1900	1800	1900	1900	3500	1900	1900
c, Capacity [veh/h]	353	353	701	120	98	15	1072	1072	525	1342	1342
d1, Uniform Delay [s]	52.82	39.94	29.54	55.96	55.31	59.20	19.05	18.29	49.03	6.82	6.81
k, delay calibration	0.11	0.11	0.28	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.43	0.02	1.54	3.55	3.35	13.08	4.03	3.30	2.44	0.69	0.68
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.81	0.02	0.52	0.53	0.46	0.34	0.71	0.67	0.77	0.34	0.34
d, Delay for Lane Group [s/veh]	57.26	39.96	31.08	59.51	58.66	72.29	23.08	21.58	51.46	7.51	7.49
Lane Group LOS	E	D	C	E	E	E	C	C	D	A	A
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.44	0.17	8.47	1.99	1.42	0.20	16.05	14.34	6.01	4.39	4.36
50th-Percentile Queue Length [ft/ln]	110.91	4.32	211.87	49.86	35.40	5.12	401.16	358.45	150.15	109.66	109.11
95th-Percentile Queue Length [veh/ln]	7.89	0.31	13.25	3.59	2.55	0.37	22.62	20.55	10.03	7.82	7.79
95th-Percentile Queue Length [ft/ln]	197.27	7.77	331.23	89.76	63.71	9.21	565.39	513.69	250.63	195.52	194.77

Movement, Approach, & Intersection Results

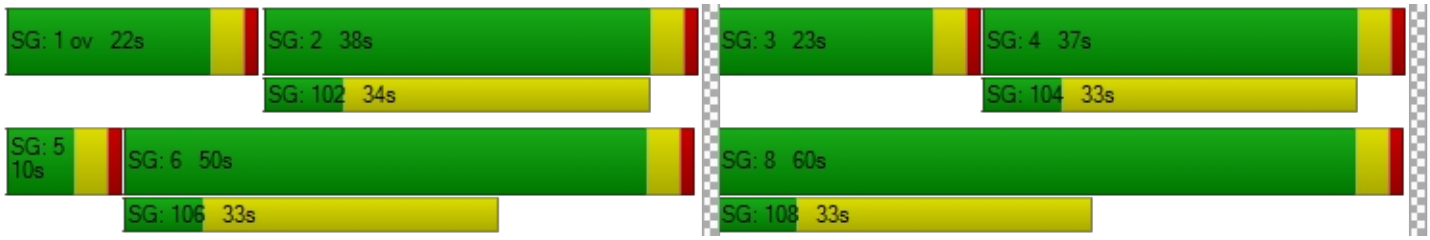
d_M, Delay for Movement [s/veh]	57.26	39.96	31.08	59.51	58.66	58.66	72.29	22.62	21.58	51.46	7.50	7.49
Movement LOS	E	D	C	E	E	E	E	C	C	D	A	A
d_A, Approach Delay [s/veh]	42.57			59.15			22.53			21.05		
Approach LOS	D			E			C			C		
d_I, Intersection Delay [s/veh]	26.79											
Intersection LOS	C											
Intersection V/C	0.781											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.51	49.51	49.51	49.51
l_p,int, Pedestrian LOS Score for Intersection	2.706	1.997	2.836	3.019
Crosswalk LOS	B	A	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	933	550	567	767
d_b, Bicycle Delay [s]	17.07	31.54	30.82	22.82
l_b,int, Bicycle LOS Score for Intersection	2.644	1.738	2.784	2.644
Bicycle LOS	B	A	C	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 7: Randolph Avenue at Madison Way

Control Type:	Signalized	Delay (sec / veh):	14.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.108

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Base Volume Input [veh/h]	28	161	9	6	148	18	36	3	62	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	28	161	9	6	148	18	36	3	62	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	40	2	2	37	5	9	1	16	0	0	0
Total Analysis Volume [veh/h]	28	161	9	6	148	18	36	3	62	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	6	6	0	6	6	0	0	6	0	0	6	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	17	48	0	10	41	0	0	32	0	0	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	15	0	0	12	0	0	19	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	72	72	1	69	69	6	6	6	6
g / C, Green / Cycle	0.03	0.79	0.79	0.01	0.77	0.77	0.06	0.06	0.06	0.06
(v / s)_i Volume / Saturation Flow Rate	0.02	0.04	0.04	0.00	0.04	0.04	0.02	0.03	0.00	0.00
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1900	1800	1900	1800	1900
c, Capacity [veh/h]	63	1508	1508	19	1462	1462	158	119	100	119
d1, Uniform Delay [s]	42.61	2.01	2.00	44.22	2.50	2.50	40.39	40.98	0.00	0.00
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.92	0.07	0.07	9.13	0.07	0.07	0.72	3.90	0.00	0.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.45	0.06	0.06	0.32	0.06	0.06	0.23	0.55	0.00	0.00
d, Delay for Lane Group [s/veh]	47.53	2.08	2.08	53.35	2.58	2.57	41.11	44.89	0.00	0.00
Lane Group LOS	D	A	A	D	A	A	D	D	A	A
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.69	0.23	0.23	0.18	0.28	0.28	0.79	1.51	0.00	0.00
50th-Percentile Queue Length [ft/ln]	17.26	5.76	5.72	4.50	6.98	6.89	19.69	37.83	0.00	0.00
95th-Percentile Queue Length [veh/ln]	1.24	0.41	0.41	0.32	0.50	0.50	1.42	2.72	0.00	0.00
95th-Percentile Queue Length [ft/ln]	31.07	10.37	10.30	8.10	12.57	12.41	35.44	68.10	0.00	0.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.53	2.08	2.08	53.35	2.57	2.57	41.11	44.89	44.89	0.00	0.00	0.00
Movement LOS	D	A	A	D	A	A	D	D	D	A	A	A
d_A, Approach Delay [s/veh]	8.50			4.35			43.54			0.00		
Approach LOS	A			A			D			A		
d_I, Intersection Delay [s/veh]	14.50											
Intersection LOS	B											
Intersection V/C	0.108											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	34.68	34.68
l_p,int, Pedestrian LOS Score for Intersection	2.379	2.423	1.987	1.946
Crosswalk LOS	B	B	A	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	978	822	622	622
d_b, Bicycle Delay [s]	11.76	15.62	21.37	21.37
l_b,int, Bicycle LOS Score for Intersection	1.723	1.702	1.726	1.560
Bicycle LOS	A	A	A	A

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 8: Randolph Avenue at Brea Mall

Control Type:	Signalized	Delay (sec / veh):	13.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.149

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Base Volume Input [veh/h]	14	190	132	28	166	6	1	0	1	117	0	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	190	132	28	166	6	1	0	1	117	0	22
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	48	33	7	42	2	0	0	0	29	0	6
Total Analysis Volume [veh/h]	14	190	132	28	166	6	1	0	1	117	0	22
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	6	6	0	6	6	0	0	6	0	0	6	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	29	0	10	29	0	0	30	0	0	31	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	17	0	0	18	0	0	19	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	R	L	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	82	74	74	82	76	76	0	0	6	6
g / C, Green / Cycle	0.82	0.74	0.74	0.82	0.76	0.76	0.00	0.00	0.06	0.06
(v / s)_i Volume / Saturation Flow Rate	0.01	0.09	0.08	0.02	0.05	0.05	0.00	0.00	0.04	0.04
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1900	1800	1900	1800	1900
c, Capacity [veh/h]	1547	1412	1412	1522	1437	1437	7	7	108	114
d1, Uniform Delay [s]	1.70	3.62	3.59	1.72	3.11	3.11	49.68	49.68	45.99	45.86
k, delay calibration	0.11	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.00	0.17	0.16	0.02	0.08	0.08	9.31	8.30	6.38	5.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.01	0.12	0.11	0.02	0.06	0.06	0.14	0.14	0.65	0.60
d, Delay for Lane Group [s/veh]	1.71	3.79	3.75	1.74	3.19	3.19	58.99	57.98	52.37	50.89
Lane Group LOS	A	A	A	A	A	A	E	E	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.03	0.85	0.77	0.07	0.38	0.38	0.04	0.04	1.89	1.82
50th-Percentile Queue Length [ft/ln]	0.80	21.14	19.31	1.81	9.53	9.48	1.07	1.04	47.21	45.48
95th-Percentile Queue Length [veh/ln]	0.06	1.52	1.39	0.13	0.69	0.68	0.08	0.07	3.40	3.27
95th-Percentile Queue Length [ft/ln]	1.45	38.05	34.75	3.25	17.15	17.07	1.92	1.87	84.98	81.87

Movement, Approach, & Intersection Results

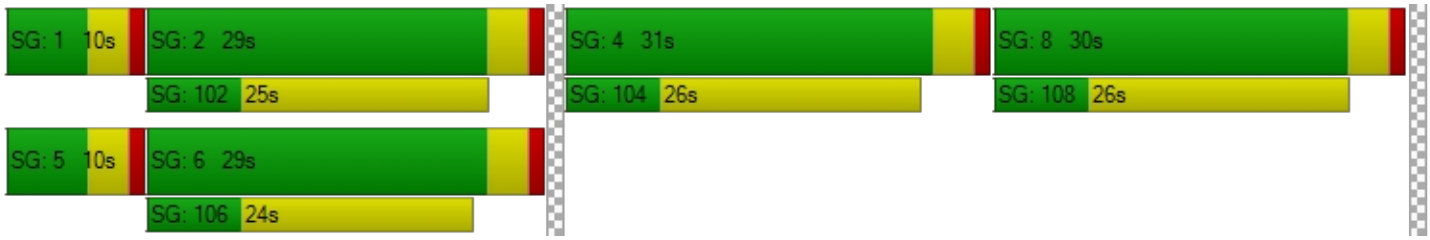
d_M, Delay for Movement [s/veh]	1.71	3.79	3.75	1.74	3.19	3.19	58.99	58.99	57.98	51.78	50.89	50.89
Movement LOS	A	A	A	A	A	A	E	E	E	D	D	D
d_A, Approach Delay [s/veh]	3.69			2.99			58.48			51.64		
Approach LOS	A			A			E			D		
d_I, Intersection Delay [s/veh]	13.49											
Intersection LOS	B											
Intersection V/C	0.149											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	39.62	39.62	39.62	39.62
l_p,int, Pedestrian LOS Score for Intersection	2.426	2.385	1.968	2.073
Crosswalk LOS	B	B	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	500	500	520	540
d_b, Bicycle Delay [s]	28.14	28.14	27.40	26.66
l_b,int, Bicycle LOS Score for Intersection	1.837	1.725	1.563	1.789
Bicycle LOS	A	A	A	A

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 9: Brea Mall South at State College Boulevard

Control Type:	Signalized	Delay (sec / veh):	17.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.282

Intersection Setup

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Base Volume Input [veh/h]	34	9	17	17	6	67	153	283	17	30	512	29
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	34	9	17	17	6	67	153	283	17	30	512	29
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	2	4	4	2	17	38	71	4	8	128	7
Total Analysis Volume [veh/h]	34	9	17	17	6	67	153	283	17	30	512	29
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	4	5	2	0	1	6	0
Auxiliary Signal Groups						4,5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	6	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	30	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	37	0	0	10	10	21	42	0	11	32	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	26	0	0	0	0	0	20	0	0	21	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No	No	No	No		No	No	
Maximum Recall		No			No	No	No	No		No	No	
Pedestrian Recall		No			No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	C	C	R	L	C	C	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	5	5	6	6	25	7	70	70	3	67	67
g / C, Green / Cycle	0.05	0.05	0.05	0.06	0.06	0.25	0.07	0.70	0.70	0.03	0.67	0.67
(v / s)_i Volume / Saturation Flow Rate	0.01	0.02	0.01	0.01	0.00	0.04	0.04	0.08	0.08	0.02	0.14	0.14
s, saturation flow rate [veh/h]	1800	1800	1900	1800	1900	1900	3500	1900	1900	1800	1900	1900
c, Capacity [veh/h]	131	151	95	101	107	480	234	1329	1329	63	1268	1268
d1, Uniform Delay [s]	45.51	46.01	45.62	45.04	44.75	28.99	45.58	4.92	4.91	47.40	6.46	6.45
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.29	0.67	0.90	0.78	0.22	0.13	3.07	0.17	0.17	5.43	0.39	0.38
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.09	0.21	0.18	0.17	0.06	0.14	0.65	0.11	0.11	0.47	0.21	0.21
d, Delay for Lane Group [s/veh]	45.80	46.68	46.52	45.82	44.97	29.12	48.65	5.09	5.08	52.83	6.85	6.83
Lane Group LOS	D	D	D	D	D	C	D	A	A	D	A	A
Critical Lane Group	No	Yes	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.29	0.78	0.43	0.42	0.15	1.26	1.94	0.96	0.94	0.83	2.15	2.11
50th-Percentile Queue Length [ft/ln]	7.24	19.41	10.69	10.57	3.68	31.57	48.62	23.90	23.53	20.65	53.72	52.74
95th-Percentile Queue Length [veh/ln]	0.52	1.40	0.77	0.76	0.26	2.27	3.50	1.72	1.69	1.49	3.87	3.80
95th-Percentile Queue Length [ft/ln]	13.04	34.93	19.24	19.03	6.62	56.82	87.52	43.02	42.35	37.18	96.69	94.93

Movement, Approach, & Intersection Results

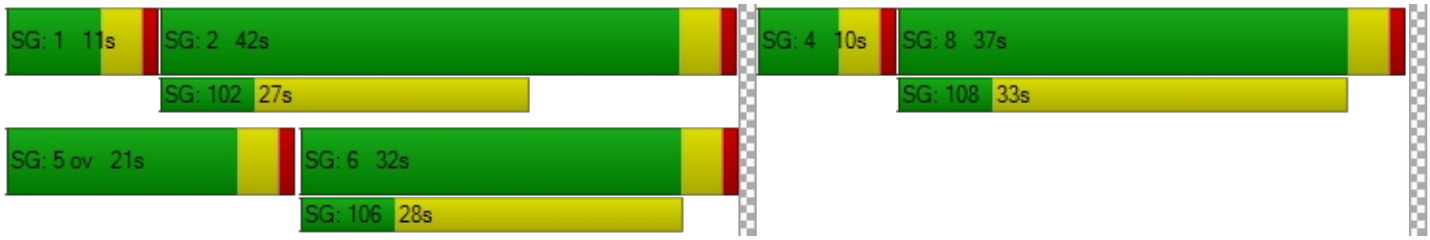
d_M, Delay for Movement [s/veh]	46.33	46.68	46.52	45.82	44.97	29.12	48.65	5.09	5.08	52.83	6.84	6.83
Movement LOS	D	D	D	D	D	C	D	A	A	D	A	A
d_A, Approach Delay [s/veh]	46.46			33.33			19.80			9.26		
Approach LOS	D			C			B			A		
d_I, Intersection Delay [s/veh]	17.07											
Intersection LOS	B											
Intersection V/C	0.282											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	39.64	39.64	0.00	39.64
l_p,int, Pedestrian LOS Score for Intersection	2.327	2.360	0.000	2.478
Crosswalk LOS	B	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	660	120	759	560
d_b, Bicycle Delay [s]	22.48	44.22	19.25	25.95
l_b,int, Bicycle LOS Score for Intersection	1.659	1.634	1.933	2.031
Bicycle LOS	A	A	A	B

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 10: Harbor Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	58.2
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.029

Intersection Setup

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	387	773	293	184	1484	334	303	1482	759	424	1327	279
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	387	773	293	184	1484	334	303	1482	759	424	1327	279
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	97	193	73	46	371	84	76	371	190	106	332	70
Total Analysis Volume [veh/h]	387	773	293	184	1484	334	303	1482	759	424	1327	279
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	16	43	0	12	39	0	16	47	0	18	49	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	31	0	0	28	0	0	31	0	0	29	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	38	38	8	34	34	12	44	44	14	46	46
g / C, Green / Cycle	0.10	0.32	0.32	0.07	0.28	0.28	0.10	0.37	0.37	0.12	0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.11	0.14	0.15	0.05	0.26	0.18	0.09	0.39	0.40	0.12	0.23	0.15
s, saturation flow rate [veh/h]	3500	5700	1900	3500	5700	1900	3500	3800	1900	3500	5700	1900
c, Capacity [veh/h]	351	1806	602	235	1617	539	351	1390	695	409	2180	727
d1, Uniform Delay [s]	54.00	32.40	33.11	55.14	41.64	37.36	53.19	38.06	38.06	53.00	29.83	26.82
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.16	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	56.06	0.16	0.61	5.70	2.52	1.77	6.35	43.84	61.88	30.76	1.27	1.53
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.10	0.43	0.49	0.78	0.92	0.62	0.86	1.07	1.09	1.04	0.61	0.38
d, Delay for Lane Group [s/veh]	110.06	32.56	33.72	60.84	44.15	39.13	59.54	81.89	99.94	83.76	31.10	28.36
Lane Group LOS	F	C	C	E	D	D	E	F	F	F	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	8.02	5.95	6.98	2.93	14.40	8.76	4.81	28.50	31.98	7.90	10.47	6.10
50th-Percentile Queue Length [ft/ln]	200.51	148.67	174.55	73.16	360.02	219.06	120.17	712.49	799.59	197.51	261.85	152.62
95th-Percentile Queue Length [veh/ln]	13.14	9.95	11.32	5.27	20.62	13.62	8.40	38.96	43.86	12.69	15.78	10.16
95th-Percentile Queue Length [ft/ln]	328.40	248.66	282.89	131.70	515.61	340.42	210.06	974.02	1096.48	317.36	394.55	253.92

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	110.06	32.56	33.72	60.84	44.15	39.13	59.54	81.89	99.94	83.76	31.10	28.36
Movement LOS	F	C	C	E	D	D	E	F	F	F	C	C
d_A, Approach Delay [s/veh]	53.43			44.85			84.62			41.72		
Approach LOS	D			D			F			D		
d_I, Intersection Delay [s/veh]	58.21											
Intersection LOS	E											
Intersection V/C	1.029											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.51	49.51	49.51	49.51
l_p,int, Pedestrian LOS Score for Intersection	3.309	3.227	3.299	3.295
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	650	583	717	750
d_b, Bicycle Delay [s]	27.34	30.11	24.71	23.44
l_b,int, Bicycle LOS Score for Intersection	2.359	2.661	2.959	2.676
Bicycle LOS	B	B	C	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 11: Puente Street at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	21.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.669

Intersection Setup

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	64	124	169	300	121	263	246	1472	85	56	1577	195
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	64	124	169	300	121	263	246	1472	85	56	1577	195
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	31	42	75	30	66	62	368	21	14	394	49
Total Analysis Volume [veh/h]	64	124	169	300	121	263	246	1472	85	56	1577	195
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	39	0	0	39	0	17	31	0	20	34	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	23	0	0	17	0	0	23	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	18	18	18	18	18	13	56	56	5	47	47
g / C, Green / Cycle	0.20	0.20	0.20	0.20	0.20	0.20	0.14	0.62	0.62	0.05	0.52	0.52
(v / s)_i Volume / Saturation Flow Rate	0.04	0.07	0.09	0.17	0.03	0.14	0.14	0.27	0.28	0.03	0.28	0.10
s, saturation flow rate [veh/h]	1800	1900	1900	1800	3800	1900	1800	3800	1900	1800	5700	1900
c, Capacity [veh/h]	353	377	377	300	753	377	261	2345	1172	92	2983	994
d1, Uniform Delay [s]	30.01	30.96	31.77	34.72	29.89	33.59	38.11	9.06	9.13	41.82	14.14	11.40
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.24	0.51	0.84	24.32	0.10	2.35	15.24	0.60	1.25	6.23	0.67	0.44
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.18	0.33	0.45	1.00	0.16	0.70	0.94	0.44	0.45	0.61	0.53	0.20
d, Delay for Lane Group [s/veh]	30.25	31.47	32.60	59.04	29.99	35.94	53.35	9.66	10.38	48.05	14.81	11.84
Lane Group LOS	C	C	C	F	C	D	D	A	B	D	B	B
Critical Lane Group	No	No	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.16	2.33	3.27	8.20	1.08	5.49	6.38	4.91	5.27	1.37	6.74	2.08
50th-Percentile Queue Length [ft/ln]	29.08	58.27	81.82	205.05	27.08	137.18	159.44	122.74	131.74	34.13	168.55	52.05
95th-Percentile Queue Length [veh/ln]	2.09	4.20	5.89	12.90	1.95	9.33	10.52	8.54	9.03	2.46	11.00	3.75
95th-Percentile Queue Length [ft/ln]	52.35	104.88	147.28	322.57	48.75	233.22	262.98	213.58	225.85	61.44	275.01	93.69

Movement, Approach, & Intersection Results

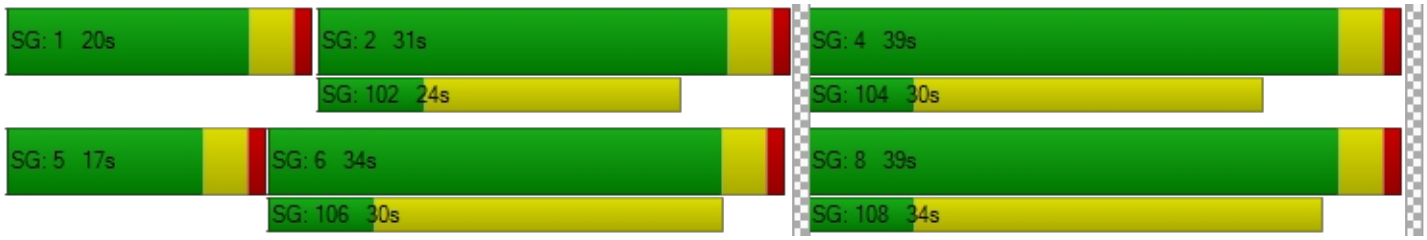
d_M, Delay for Movement [s/veh]	30.25	31.47	32.60	59.04	29.99	35.94	53.35	9.87	10.38	48.05	14.81	11.84
Movement LOS	C	C	C	F	C	D	D	A	B	D	B	B
d_A, Approach Delay [s/veh]	31.79			45.02			15.83			15.52		
Approach LOS	C			D			B			B		
d_I, Intersection Delay [s/veh]	21.20											
Intersection LOS	C											
Intersection V/C	0.669											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	34.68	34.68
l_p,int, Pedestrian LOS Score for Intersection	2.420	2.543	3.201	3.611
Crosswalk LOS	B	B	C	D
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	778	778	600	666
d_b, Bicycle Delay [s]	16.82	16.82	22.06	20.01
l_b,int, Bicycle LOS Score for Intersection	2.149	2.124	2.551	2.565
Bicycle LOS	B	B	B	B

Sequence

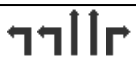
Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: Brea Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	46.9
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.948

Intersection Setup

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	473	581	203	181	1222	228	177	1715	395	223	1790	122
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	473	581	203	181	1222	228	177	1715	395	223	1790	122
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	118	145	51	45	306	57	44	429	99	56	448	31
Total Analysis Volume [veh/h]	473	581	203	181	1222	228	177	1715	395	223	1790	122
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	22	41	0	24	43	0	11	43	0	12	44	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	30	0	0	28	0	0	30	0	0	30	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	48	48	8	39	39	7	39	39	8	40	40
g / C, Green / Cycle	0.15	0.40	0.40	0.07	0.32	0.32	0.06	0.33	0.33	0.07	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.14	0.10	0.11	0.05	0.32	0.12	0.05	0.30	0.21	0.06	0.31	0.06
s, saturation flow rate [veh/h]	3500	5700	1900	3500	3800	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	524	2299	766	246	1231	615	205	1860	620	234	1907	636
d1, Uniform Delay [s]	50.16	23.79	23.93	54.69	40.44	31.18	56.02	38.96	34.39	55.81	38.73	28.39
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.04	0.06	0.18	4.24	10.42	0.37	10.34	9.10	4.95	18.19	10.46	0.67
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.90	0.25	0.26	0.74	0.99	0.37	0.86	0.92	0.64	0.95	0.94	0.19
d, Delay for Lane Group [s/veh]	56.20	23.85	24.11	58.94	50.86	31.55	66.37	48.06	39.34	74.00	49.19	29.06
Lane Group LOS	E	C	C	E	D	C	E	D	D	E	D	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	7.40	3.67	3.90	2.83	19.46	5.15	2.95	17.59	10.62	3.95	18.65	2.64
50th-Percentile Queue Length [ft/ln]	185.06	91.87	97.48	70.69	486.55	128.75	73.78	439.72	265.58	98.81	466.21	65.92
95th-Percentile Queue Length [veh/ln]	11.86	6.61	7.02	5.09	26.70	8.87	5.31	24.47	15.97	7.11	25.73	4.75
95th-Percentile Queue Length [ft/ln]	296.61	165.36	175.46	127.25	667.43	221.80	132.80	611.68	399.21	177.85	643.27	118.66

Movement, Approach, & Intersection Results

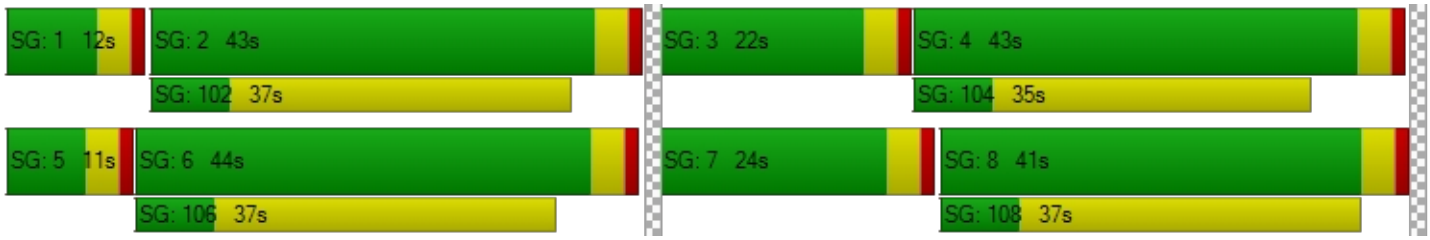
d_M, Delay for Movement [s/veh]	56.20	23.85	24.11	58.94	50.86	31.55	66.37	48.06	39.34	74.00	49.19	29.06
Movement LOS	E	C	C	E	D	C	E	D	D	E	D	C
d_A, Approach Delay [s/veh]	36.07			49.06			47.97			50.63		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	46.94											
Intersection LOS	D											
Intersection V/C	0.948											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.51	49.51	49.51	49.51
l_p,int, Pedestrian LOS Score for Intersection	3.117	3.045	3.381	3.322
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	617	650	650	667
d_b, Bicycle Delay [s]	28.71	27.34	27.34	26.67
l_b,int, Bicycle LOS Score for Intersection	2.251	2.905	2.817	2.734
Bicycle LOS	B	C	C	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 13: Randolph Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	15.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.550

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	39	20	71	192	22	78	138	1742	27	43	1882	182
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	39	20	71	192	22	78	138	1742	27	43	1882	182
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	5	18	48	6	20	35	436	7	11	471	46
Total Analysis Volume [veh/h]	39	20	71	192	22	78	138	1742	27	43	1882	182
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	10	0	0	40	0	10	40	0	10	40	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	29	0	0	28	0	0	29	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	6	6	8	8	6	66	66	4	64	64
g / C, Green / Cycle	0.06	0.06	0.06	0.08	0.08	0.06	0.66	0.66	0.04	0.64	0.64
(v / s)_i Volume / Saturation Flow Rate	0.02	0.01	0.04	0.05	0.05	0.04	0.31	0.32	0.02	0.33	0.10
s, saturation flow rate [veh/h]	1800	1800	1900	3500	1900	3500	3800	1900	1800	5700	1900
c, Capacity [veh/h]	107	107	113	287	156	209	2492	1246	77	3644	1215
d1, Uniform Delay [s]	45.29	44.81	46.03	44.64	44.53	46.10	8.55	8.71	46.98	9.73	7.21
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.08	0.84	5.68	2.68	4.34	3.56	0.63	1.36	6.10	0.53	0.26
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.37	0.19	0.63	0.67	0.64	0.66	0.47	0.49	0.56	0.52	0.15
d, Delay for Lane Group [s/veh]	47.37	45.64	51.71	47.31	48.87	49.65	9.18	10.07	53.08	10.26	7.47
Lane Group LOS	D	D	D	D	D	D	A	B	D	B	A
Critical Lane Group	No	No	Yes	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.99	0.50	1.89	2.41	2.58	1.77	5.78	6.39	1.18	6.84	1.52
50th-Percentile Queue Length [ft/ln]	24.74	12.39	47.37	60.17	64.45	44.36	144.60	159.72	29.42	170.93	37.98
95th-Percentile Queue Length [veh/ln]	1.78	0.89	3.41	4.33	4.64	3.19	9.73	10.53	2.12	11.13	2.73
95th-Percentile Queue Length [ft/ln]	44.53	22.30	85.26	108.31	116.01	79.86	243.21	263.35	52.95	278.13	68.37

Movement, Approach, & Intersection Results

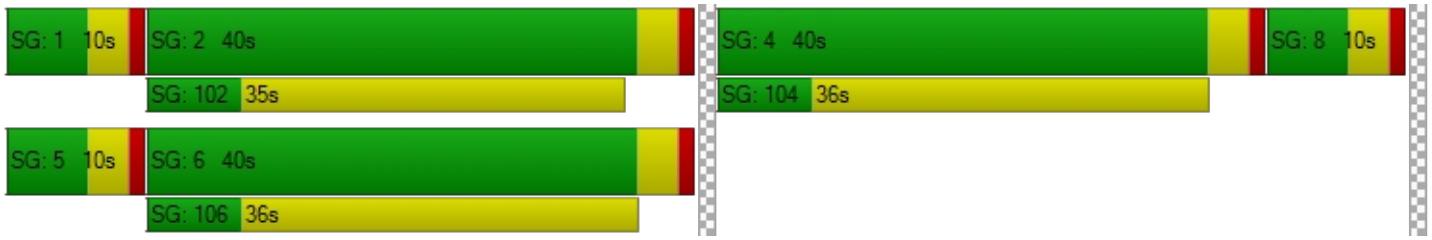
d_M, Delay for Movement [s/veh]	47.37	45.64	51.71	47.31	48.87	48.87	49.65	9.47	10.07	53.08	10.26	7.47
Movement LOS	D	D	D	D	D	D	D	A	B	D	B	A
d_A, Approach Delay [s/veh]	49.48			47.85			12.39			10.89		
Approach LOS	D			D			B			B		
d_I, Intersection Delay [s/veh]	15.10											
Intersection LOS	B											
Intersection V/C	0.550											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	39.64	39.64	39.64	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.190	2.428	3.206	0.000
Crosswalk LOS	B	B	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	120	719	719	719
d_b, Bicycle Delay [s]	44.22	20.51	20.51	20.51
l_b,int, Bicycle LOS Score for Intersection	1.667	2.041	2.608	2.718
Bicycle LOS	A	B	B	B

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 14: State College Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	37.5
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.867

Intersection Setup

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	125	186	479	151	502	33	37	1775	214	534	1953	203
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	125	186	479	151	502	33	37	1775	214	534	1953	203
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	31	47	120	38	126	8	9	444	54	134	488	51
Total Analysis Volume [veh/h]	125	186	479	151	502	33	37	1775	214	534	1953	203
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	14	42	0	14	42	0	10	36	0	23	49	49
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	30	0	0	28	0	0	23	0	0	23	23
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	115	115	115	115	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	6	31	31	10	35	35	4	39	39	19	53	67
g / C, Green / Cycle	0.05	0.27	0.27	0.09	0.31	0.31	0.04	0.33	0.33	0.17	0.46	0.59
(v / s)_i Volume / Saturation Flow Rate	0.04	0.05	0.25	0.08	0.14	0.14	0.01	0.26	0.27	0.15	0.34	0.11
s, saturation flow rate [veh/h]	3500	3800	1900	2000	1900	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	186	1038	519	175	585	585	130	1908	636	579	2640	1112
d1, Uniform Delay [s]	53.50	31.96	40.64	51.82	32.15	32.05	53.92	34.42	34.72	47.29	25.23	11.07
k, delay calibration	0.11	0.11	0.29	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.18	0.08	16.22	11.68	0.57	0.55	1.19	3.19	9.99	6.67	1.91	0.36
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.67	0.18	0.92	0.86	0.46	0.45	0.28	0.78	0.80	0.92	0.74	0.18
d, Delay for Lane Group [s/veh]	57.68	32.04	56.86	63.50	32.72	32.60	55.11	37.60	44.71	53.96	27.14	11.43
Lane Group LOS	E	C	E	E	C	C	E	D	D	D	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.88	2.00	15.36	2.43	6.15	6.01	0.54	12.83	14.45	8.03	14.59	2.47
50th-Percentile Queue Length [ft/ln]	47.07	50.00	384.00	60.77	153.70	150.16	13.58	320.83	361.33	200.79	364.71	61.66
95th-Percentile Queue Length [veh/ln]	3.39	3.60	21.79	4.38	10.21	10.03	0.98	18.71	20.69	12.68	20.85	4.44
95th-Percentile Queue Length [ft/ln]	84.73	90.00	544.68	109.38	255.37	250.64	24.44	467.70	517.20	316.98	521.31	110.98

Movement, Approach, & Intersection Results

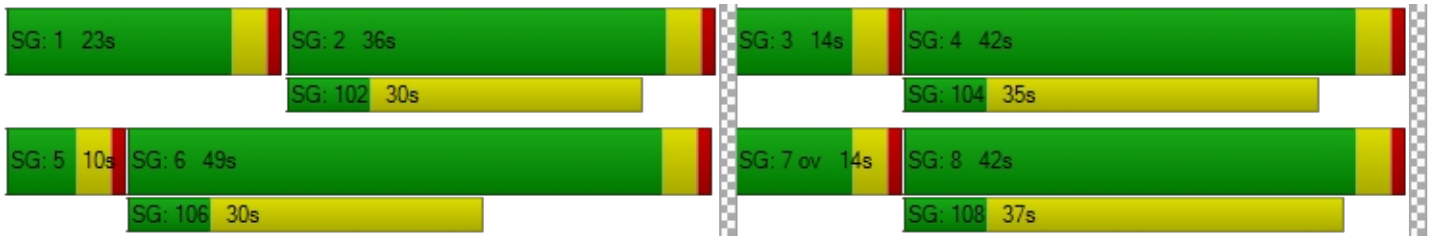
d_M, Delay for Movement [s/veh]	57.68	32.04	56.86	63.50	32.67	32.60	55.11	38.78	44.71	53.96	27.14	11.43
Movement LOS	E	C	E	E	C	C	E	D	D	D	C	B
d_A, Approach Delay [s/veh]	51.15			39.45			39.70			31.28		
Approach LOS	D			D			D			C		
d_I, Intersection Delay [s/veh]	37.48											
Intersection LOS	D											
Intersection V/C	0.867											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	47.05	47.05	47.05	47.05
l_p,int, Pedestrian LOS Score for Intersection	2.890	2.645	3.309	3.475
Crosswalk LOS	C	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	661	661	556	782
d_b, Bicycle Delay [s]	25.80	25.80	29.97	21.32
l_b,int, Bicycle LOS Score for Intersection	2.211	2.126	2.395	3.039
Bicycle LOS	B	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 15: SR-57 SB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	15.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.690

Intersection Setup

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	0	0	0	684	0	571	0	1739	828	0	2223	232
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	684	0	571	0	1739	828	0	2223	232
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	171	0	143	0	435	207	0	556	58
Total Analysis Volume [veh/h]	0	0	0	684	0	571	0	1739	828	0	2223	232
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	7	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	6	0	0	0	6	0	0	6	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	64	0	0	0	26	0	0	26	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	15	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	C
C, Cycle Length [s]		90	90	90	90	90
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		26	26	26	56	56
g / C, Green / Cycle		0.29	0.29	0.29	0.62	0.62
(v / s)_i Volume / Saturation Flow Rate		0.24	0.24	0.22	0.31	0.39
s, saturation flow rate [veh/h]		1750	1750	1900	5700	5700
c, Capacity [veh/h]		502	502	544	3559	3559
d1, Uniform Delay [s]		30.04	30.04	29.31	9.12	10.39
k, delay calibration		0.11	0.11	0.11	0.50	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		3.72	3.72	2.32	0.48	0.84
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.83	0.83	0.77	0.49	0.62
d, Delay for Lane Group [s/veh]		33.76	33.76	31.63	9.60	11.23
Lane Group LOS		C	C	C	A	B
Critical Lane Group		Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]		8.72	8.72	8.35	5.59	8.18
50th-Percentile Queue Length [ft/ln]		217.99	217.99	208.85	139.74	204.61
95th-Percentile Queue Length [veh/ln]		13.56	13.56	13.09	9.47	12.88
95th-Percentile Queue Length [ft/ln]		339.06	339.06	327.35	236.67	321.90

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	33.76	0.00	32.20	0.00	9.60	0.00	0.00	11.23	0.00
Movement LOS				C		C		A			B	
d_A, Approach Delay [s/veh]	0.00			33.05			9.60			11.23		
Approach LOS	A			C			A			B		
d_I, Intersection Delay [s/veh]	15.93											
Intersection LOS	B											
Intersection V/C	0.690											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	34.63	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	2.436	0.000	0.000
Crosswalk LOS	F	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1335	489	489
d_b, Bicycle Delay [s]	44.96	4.98	25.65	25.65
l_b,int, Bicycle LOS Score for Intersection	4.132	3.630	2.516	2.782
Bicycle LOS	D	D	B	C

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 16: SR-57 NB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	25.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.688

Intersection Setup

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	1149	31	949	0	0	87	100	1552	635	0	1752	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1149	31	949	0	0	87	100	1552	635	0	1752	14
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	287	8	237	0	0	22	25	388	159	0	438	4
Total Analysis Volume [veh/h]	1149	31	949	0	0	87	100	1552	635	0	1752	14
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Overlap	Protecte	Permiss	Unsigna	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	0	5	5	2	0	0	6	0
Auxiliary Signal Groups						5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	6	0	0	0	6	6	6	0	0	6	0
Maximum Green [s]	0	30	0	0	0	30	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	1.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	33	0	0	0	11	11	57	0	0	46	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	22	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No				No		No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No				No	No	No			No	
Maximum Recall		No				No	No	No			No	
Pedestrian Recall		No				No	No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	R	L	C	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	29	29	29	6	6	53	43	43
g / C, Green / Cycle	0.32	0.32	0.32	0.07	0.07	0.59	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.30	0.31	0.28	0.02	0.06	0.27	0.23	0.23
s, saturation flow rate [veh/h]	3500	1750	1900	3800	1800	5700	5700	1900
c, Capacity [veh/h]	1127	563	612	275	130	3359	2693	898
d1, Uniform Delay [s]	29.57	29.95	28.93	39.67	41.04	10.44	16.33	16.33
k, delay calibration	0.11	0.40	0.34	0.11	0.11	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.10	25.04	12.34	0.65	9.06	0.46	0.65	1.92
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.93	0.96	0.88	0.32	0.77	0.46	0.49	0.49
d, Delay for Lane Group [s/veh]	33.67	55.00	41.27	40.32	50.10	10.90	16.98	18.26
Lane Group LOS	C	D	D	D	D	B	B	B
Critical Lane Group	No	Yes	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	11.18	14.91	12.72	0.93	2.48	5.40	6.08	6.40
50th-Percentile Queue Length [ft/ln]	279.47	372.81	317.89	23.26	62.04	134.99	152.04	160.01
95th-Percentile Queue Length [veh/ln]	16.66	21.25	18.56	1.67	4.47	9.21	10.13	10.55
95th-Percentile Queue Length [ft/ln]	416.55	531.14	464.09	41.87	111.67	230.27	253.15	263.74

Movement, Approach, & Intersection Results

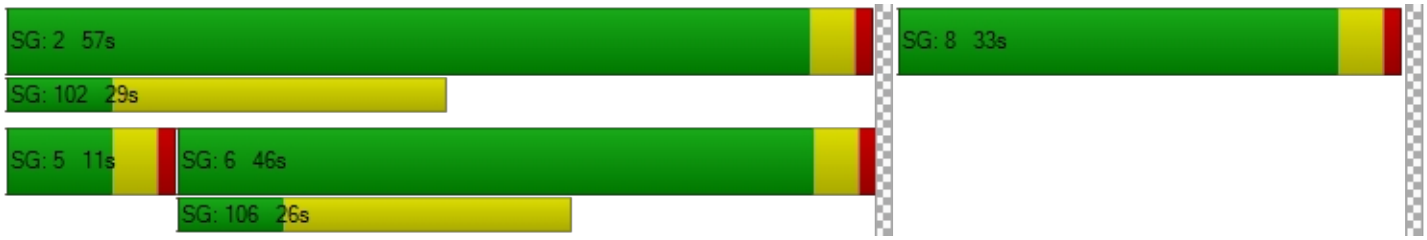
d_M, Delay for Movement [s/veh]	35.28	55.00	47.30	0.00	0.00	40.32	50.10	10.90	0.00	0.00	17.29	18.26
Movement LOS	D	D	D			D	D	B			B	B
d_A, Approach Delay [s/veh]	41.01			40.32			13.28			17.30		
Approach LOS	D			D			B			B		
d_I, Intersection Delay [s/veh]	25.43											
Intersection LOS	C											
Intersection V/C	0.688											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.70	34.70	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.715	2.015	0.000	0.000
Crosswalk LOS	B	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	644	155	1177	933
d_b, Bicycle Delay [s]	20.69	38.30	7.62	12.82
l_b,int, Bicycle LOS Score for Intersection	5.072	1.560	2.468	2.288
Bicycle LOS	F	A	B	B

Sequence

Ring 1	-	2	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 17: Associated Road at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	33.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.846

Intersection Setup

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	171	241	94	190	382	185	238	2193	117	104	1817	112
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	171	241	94	190	382	185	238	2193	117	104	1817	112
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	43	60	24	48	96	46	60	548	29	26	454	28
Total Analysis Volume [veh/h]	171	241	94	190	382	185	238	2193	117	104	1817	112
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	10	41	0	11	42	0	21	47	0	11	37	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	28	0	0	29	0	0	26	0	0	25	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	24	24	7	25	25	16	56	56	7	47	47
g / C, Green / Cycle	0.05	0.22	0.22	0.06	0.23	0.23	0.15	0.51	0.51	0.06	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.05	0.09	0.08	0.05	0.20	0.10	0.13	0.40	0.42	0.06	0.25	0.27
s, saturation flow rate [veh/h]	3500	1900	1900	3500	1900	1900	1800	3800	1900	1800	5700	1900
c, Capacity [veh/h]	194	411	411	225	428	428	268	1937	968	116	2424	808
d1, Uniform Delay [s]	51.65	37.23	36.96	50.96	41.36	36.61	45.95	22.06	22.64	51.14	24.25	24.75
k, delay calibration	0.11	0.11	0.11	0.11	0.15	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	12.26	0.69	0.61	8.29	8.97	0.69	9.65	3.28	7.52	20.35	1.05	3.61
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.88	0.42	0.39	0.84	0.89	0.43	0.89	0.79	0.82	0.90	0.59	0.62
d, Delay for Lane Group [s/veh]	63.91	37.92	37.57	59.25	50.33	37.30	55.61	25.34	30.16	71.49	25.31	28.36
Lane Group LOS	E	D	D	E	D	D	E	C	C	E	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.67	4.11	3.78	2.84	11.01	4.35	7.07	16.19	18.33	3.49	9.53	10.86
50th-Percentile Queue Length [ft/ln]	66.69	102.86	94.53	71.10	275.36	108.66	176.65	404.71	458.31	87.37	238.15	271.39
95th-Percentile Queue Length [veh/ln]	4.80	7.41	6.81	5.12	16.46	7.77	11.43	22.79	25.35	6.29	14.59	16.26
95th-Percentile Queue Length [ft/ln]	120.05	185.15	170.16	127.99	411.43	194.14	285.64	569.68	633.86	157.27	364.70	406.47

Movement, Approach, & Intersection Results

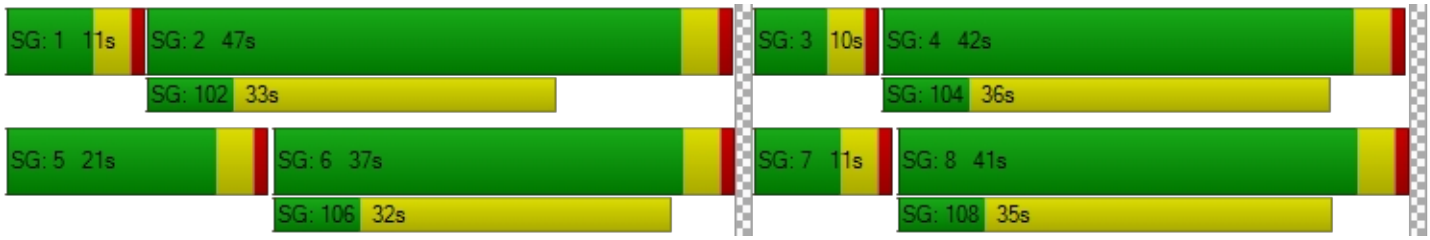
d_M, Delay for Movement [s/veh]	63.91	37.82	37.57	59.25	50.33	37.30	55.61	26.82	30.16	71.49	25.96	28.36
Movement LOS	E	D	D	E	D	D	E	C	C	E	C	C
d_A, Approach Delay [s/veh]	46.59			49.39			29.66			28.42		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	33.25											
Intersection LOS	C											
Intersection V/C	0.846											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	44.58	44.58	44.58	44.58
l_p,int, Pedestrian LOS Score for Intersection	2.526	2.681	3.310	3.285
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	672	691	781	600
d_b, Bicycle Delay [s]	24.25	23.59	20.43	26.97
l_b,int, Bicycle LOS Score for Intersection	1.977	2.809	2.961	2.398
Bicycle LOS	A	C	C	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 18: Castlegate Lane/Placentia Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	18.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.737

Intersection Setup

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	201	14	167	28	33	16	14	2169	487	201	1755	37
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	201	14	167	28	33	16	14	2169	487	201	1755	37
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	50	4	42	7	8	4	4	542	122	50	439	9
Total Analysis Volume [veh/h]	201	14	167	28	33	16	14	2169	487	201	1755	37
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	26	0	0	10	0	10	32	0	22	44	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	15	0	0	0	0	0	21	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	11	11	5	5	2	46	46	12	57	57
g / C, Green / Cycle	0.12	0.12	0.12	0.06	0.06	0.02	0.51	0.51	0.13	0.63	0.63
(v / s)_i Volume / Saturation Flow Rate	0.06	0.06	0.09	0.02	0.03	0.01	0.38	0.26	0.11	0.31	0.32
s, saturation flow rate [veh/h]	1750	1750	1900	1800	1900	1800	5700	1900	1800	3800	1900
c, Capacity [veh/h]	205	205	222	105	110	38	2926	975	241	2380	1190
d1, Uniform Delay [s]	37.45	37.46	38.54	40.63	41.06	43.55	17.24	14.36	38.05	9.13	9.30
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.07	2.09	5.05	1.35	2.77	5.86	1.74	1.83	7.30	0.74	1.60
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.52	0.53	0.75	0.27	0.44	0.37	0.74	0.50	0.83	0.50	0.52
d, Delay for Lane Group [s/veh]	39.51	39.55	43.59	41.98	43.83	49.41	18.98	16.19	45.35	9.87	10.90
Lane Group LOS	D	D	D	D	D	D	B	B	D	A	B
Critical Lane Group	No	No	Yes	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.31	2.33	3.83	0.63	1.13	0.37	11.28	6.56	4.74	5.74	6.35
50th-Percentile Queue Length [ft/ln]	57.80	58.18	95.77	15.70	28.16	9.18	282.04	164.01	118.58	143.48	158.85
95th-Percentile Queue Length [veh/ln]	4.16	4.19	6.90	1.13	2.03	0.66	16.79	10.76	8.31	9.67	10.49
95th-Percentile Queue Length [ft/ln]	104.04	104.73	172.39	28.26	50.68	16.52	419.75	269.03	207.87	241.70	262.20

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	39.53	39.55	43.59	41.98	43.83	43.83	49.41	18.98	16.19	45.35	10.21	10.90
Movement LOS	D	D	D	D	D	D	D	B	B	D	B	B
d_A, Approach Delay [s/veh]	41.31			43.16			18.63			13.76		
Approach LOS	D			D			B			B		
d_I, Intersection Delay [s/veh]	18.80											
Intersection LOS	B											
Intersection V/C	0.737											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.72	34.72	0.00	34.72
l_p,int, Pedestrian LOS Score for Intersection	2.399	1.986	0.000	3.200
Crosswalk LOS	B	A	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	488	133	622	888
d_b, Bicycle Delay [s]	25.73	39.24	21.40	13.92
l_b,int, Bicycle LOS Score for Intersection	2.190	1.687	3.028	2.656
Bicycle LOS	B	A	C	B

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Brea Mall Expansion, Brea

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Report File: N:\...\PM 2045+P.pdf

Scenario 14 PM 2045+P
4/12/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State College Boulevard at Lambert Road	Signalized	HCM 6th Edition	NB Left	0.883	44.0	D
2	SR-57 SB Ramps at Lambert Road	Signalized	HCM 6th Edition	WB Left	0.670	19.4	B
3	SR-57 NB Ramps at Lambert Road	Signalized	HCM 6th Edition	NB Left	0.574	13.6	B
4	Randolph Avenue at Birch Street	Signalized	HCM 6th Edition	NB Left	0.542	22.6	C
5	State College Boulevard at Birch Street	Signalized	HCM 6th Edition	NB Left	0.877	38.1	D
6	S Associated Road at Birch Street	Signalized	HCM 6th Edition	EB Left	0.761	28.9	C
7	Randolph Avenue at Madison Way	Signalized	HCM 6th Edition	WB Left	0.196	16.2	B
8	Randolph Avenue at Brea Mall	Signalized	HCM 6th Edition	EB Left	0.408	18.3	B
9	Brea Mall South at State College Boulevard	Signalized	HCM 6th Edition	WB Left	0.643	30.9	C
10	Harbor Boulevard at Imperial Highway	Signalized	HCM 6th Edition	WB Left	1.045	70.0	E
11	Puente Street at Imperial Highway	Signalized	HCM 6th Edition	WB Left	0.640	16.8	B
12	Brea Boulevard at Imperial Highway	Signalized	HCM 6th Edition	WB Left	0.888	41.7	D
13	Randolph Avenue at Imperial Highway	Signalized	HCM 6th Edition	WB Left	0.763	26.8	C
14	State College Boulevard at Imperial Highway	Signalized	HCM 6th Edition	SB Left	1.080	71.9	E
15	SR-57 SB Ramps at Imperial Highway	Signalized	HCM 6th Edition	SB Left	0.813	18.1	B
16	SR-57 NB Ramps at Imperial Highway	Signalized	HCM 6th Edition	EB Left	0.824	26.1	C
17	Associated Road at Imperial Highway	Signalized	HCM 6th Edition	NB Left	0.944	48.5	D
18	Castlegate Lane/Placentia	Signalized	HCM 6th	EB Left	0.847	28.2	C

16	Avenue at Imperial Highway	Signalized	Edition	EB Left	0.847	28.2	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: State College Boulevard at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	44.0
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.883

Intersection Setup

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	368	687	349	637	459	17	44	1694	302	454	1361	801
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	368	687	349	637	459	17	44	1694	302	454	1361	801
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	92	172	87	159	115	4	11	424	76	114	340	200
Total Analysis Volume [veh/h]	368	687	349	637	459	17	44	1694	302	454	1361	801
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	17	30	0	31	44	0	10	39	0	20	49	49
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	0	0	0	33	0	0	28	0	0	22	22
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	13	25	25	25	27	39	39	5	36	36	16	47	78
g / C, Green / Cycle	0.11	0.21	0.21	0.21	0.22	0.32	0.32	0.04	0.30	0.30	0.13	0.39	0.65
(v / s)_i Volume / Saturation Flow Rate	0.11	0.19	0.19	0.17	0.18	0.13	0.12	0.01	0.26	0.26	0.13	0.24	0.42
s, saturation flow rate [veh/h]	3500	1900	1900	1900	3500	1900	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	381	396	396	396	787	616	616	138	1709	570	468	2247	1240
d1, Uniform Delay [s]	53.28	46.48	46.34	45.16	44.08	31.35	31.29	56.11	39.94	39.87	51.76	28.95	12.54
k, delay calibration	0.11	0.28	0.27	0.21	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	14.78	18.21	16.51	7.01	2.04	0.40	0.39	1.32	6.71	16.77	13.46	1.22	2.61
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.97	0.91	0.90	0.80	0.81	0.39	0.38	0.32	0.88	0.87	0.97	0.61	0.65
d, Delay for Lane Group [s/veh]	68.06	64.70	62.86	52.17	46.12	31.75	31.69	57.43	46.65	56.64	65.23	30.17	15.15
Lane Group LOS	E	E	E	D	D	C	C	E	D	E	E	C	B
Critical Lane Group	No	Yes	No	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	6.30	12.51	12.16	9.71	9.16	5.45	5.37	0.67	14.93	16.43	7.66	10.57	12.93
50th-Percentile Queue Length [ft/ln]	157.5	312.8	304.0	242.8	229.04	136.21	134.29	16.87	373.25	410.63	191.46	264.14	323.28
95th-Percentile Queue Length [veh/ln]	10.42	18.31	17.88	14.82	14.13	9.28	9.17	1.21	21.27	23.07	12.20	15.90	18.83
95th-Percentile Queue Length [ft/ln]	260.4	457.8	447.0	370.6	353.14	231.91	229.31	30.37	531.67	576.80	304.92	397.41	470.71

Movement, Approach, & Intersection Results

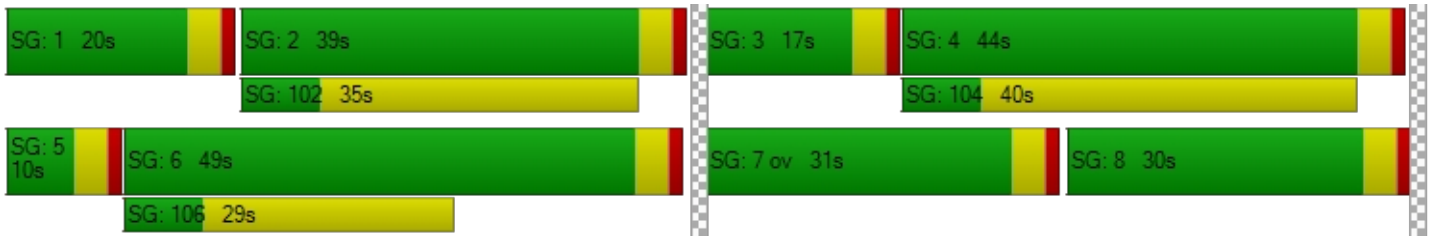
d_M, Delay for Movement [s/veh]	68.06	63.83	52.29	46.12	31.72	31.69	57.43	47.80	56.64	65.23	30.17	15.15
Movement LOS	E	E	D	D	C	C	E	D	E	E	C	B
d_A, Approach Delay [s/veh]	62.28			39.96			49.32			31.65		
Approach LOS	E			D			D			C		
d_I, Intersection Delay [s/veh]	43.96											
Intersection LOS	D											
Intersection V/C	0.883											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.52	49.52	49.52	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.972	2.896	3.273	0.000
Crosswalk LOS	C	C	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	433	666	583	750
d_b, Bicycle Delay [s]	36.83	26.68	30.12	23.45
l_b,int, Bicycle LOS Score for Intersection	2.718	2.478	2.401	2.998
Bicycle LOS	B	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: SR-57 SB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	19.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.670

Intersection Setup

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	0	0	0	497	0	895	0	1512	877	280	1836	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	497	0	895	0	1512	877	280	1836	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	124	0	224	0	378	219	70	459	0
Total Analysis Volume [veh/h]	0	0	0	497	0	895	0	1512	877	280	1836	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	7	0	0	0	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	6	0	0	0	6	0	6	6	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	46	0	0	0	31	0	13	44	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	12	0	0	20	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall				No				No		No	No	
Maximum Recall				No				No		No	No	
Pedestrian Recall				No				No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	R	C	R	L	C
C, Cycle Length [s]		90	90	90	90	90	90
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		27	27	42	42	9	55
g / C, Green / Cycle		0.30	0.30	0.47	0.47	0.10	0.62
(v / s)_i Volume / Saturation Flow Rate		0.14	0.24	0.27	0.23	0.08	0.32
s, saturation flow rate [veh/h]		3500	3800	5700	3800	3500	5700
c, Capacity [veh/h]		1035	1124	2680	1787	353	3508
d1, Uniform Delay [s]		26.03	29.21	17.20	16.43	39.57	9.82
k, delay calibration		0.11	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.35	1.33	0.87	0.97	4.06	0.56
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.48	0.80	0.56	0.49	0.79	0.52
d, Delay for Lane Group [s/veh]		26.38	30.55	18.06	17.39	43.64	10.38
Lane Group LOS		C	C	B	B	D	B
Critical Lane Group		No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]		4.32	8.83	7.31	6.14	3.18	6.26
50th-Percentile Queue Length [ft/ln]		107.91	220.79	182.87	153.51	79.59	156.44
95th-Percentile Queue Length [veh/ln]		7.72	13.71	11.75	10.20	5.73	10.36
95th-Percentile Queue Length [ft/ln]		193.09	342.64	293.76	255.11	143.26	259.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	26.38	0.00	30.55	0.00	18.06	17.39	43.64	10.38	0.00
Movement LOS				C		C		B	B	D	B	
d_A, Approach Delay [s/veh]	0.00			29.06			17.82			14.78		
Approach LOS	A			C			B			B		
d_I, Intersection Delay [s/veh]	19.38											
Intersection LOS	B											
Intersection V/C	0.670											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.278	2.470	0.000	0.000
Crosswalk LOS	B	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	933	600	889
d_b, Bicycle Delay [s]	45.01	12.81	22.06	13.90
l_b,int, Bicycle LOS Score for Intersection	4.132	1.560	2.874	2.723
Bicycle LOS	D	A	C	B

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 3: SR-57 NB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	13.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.574

Intersection Setup

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			No			No			No		

Volumes

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	710	0	330	0	0	0	0	1638	602	0	1203	571
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	710	0	330	0	0	0	0	1638	602	0	1203	571
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	178	0	83	0	0	0	0	410	151	0	301	0
Total Analysis Volume [veh/h]	710	0	330	0	0	0	0	1638	602	0	1203	0
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Permiss	Split	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna
Signal Group	3	0	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	0	0	0	0	0	0	6	0	0	6	0
Maximum Green [s]	30	0	0	0	0	0	0	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	54	0	0	0	0	0	0	36	0	0	36	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	25	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R		C	C	R	C
C, Cycle Length [s]	90	90		90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	22	22		59	59	59	59
g / C, Green / Cycle	0.25	0.25		0.66	0.66	0.66	0.66
(v / s)_i Volume / Saturation Flow Rate	0.20	0.17		0.29	0.29	0.29	0.21
s, saturation flow rate [veh/h]	3500	1900		3800	1900	1900	5700
c, Capacity [veh/h]	873	474		2514	1257	1257	3771
d1, Uniform Delay [s]	31.75	30.63		7.29	7.29	7.29	6.52
k, delay calibration	0.11	0.11		0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.90	1.86		0.57	1.15	1.15	0.22
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.81	0.70		0.45	0.45	0.45	0.32
d, Delay for Lane Group [s/veh]	33.65	32.49		7.87	8.44	8.44	6.74
Lane Group LOS	C	C		A	A	A	A
Critical Lane Group	Yes	No		Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	7.29	6.58		4.63	4.83	4.83	2.91
50th-Percentile Queue Length [ft/ln]	182.25	164.38		115.74	120.73	120.73	72.83
95th-Percentile Queue Length [veh/ln]	11.72	10.78		8.16	8.43	8.43	5.24
95th-Percentile Queue Length [ft/ln]	292.95	269.51		203.96	210.83	210.83	131.10

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	33.65	0.00	32.49	0.00	0.00	0.00	0.00	7.92	8.44	0.00	6.74	0.00
Movement LOS	C		C					A	A		A	
d_A, Approach Delay [s/veh]	33.28			0.00			8.15			6.74		
Approach LOS	C			A			A			A		
d_I, Intersection Delay [s/veh]	13.60											
Intersection LOS	B											
Intersection V/C	0.574											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.63	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.619	0.000	0.000	0.000
Crosswalk LOS	B	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1112	0	712	712
d_b, Bicycle Delay [s]	8.86	44.96	18.65	18.65
l_b,int, Bicycle LOS Score for Intersection	1.560	4.132	2.792	2.221
Bicycle LOS	A	D	C	B

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 4: Randolph Avenue at Birch Street

Control Type:	Signalized	Delay (sec / veh):	22.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.542

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Base Volume Input [veh/h]	148	76	187	55	54	112	93	770	117	208	1215	49
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	148	76	187	55	54	112	93	770	117	208	1215	49
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	19	47	14	14	28	23	193	29	52	304	12
Total Analysis Volume [veh/h]	148	76	187	55	54	112	93	770	117	208	1215	49
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	40	0	0	40	0	10	31	0	19	40	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	25	0	0	19	0	0	18	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	11	11	11	11	6	54	54	12	61	61
g / C, Green / Cycle	0.13	0.13	0.13	0.13	0.13	0.07	0.60	0.60	0.14	0.67	0.67
(v / s)_i Volume / Saturation Flow Rate	0.08	0.04	0.10	0.03	0.09	0.05	0.24	0.23	0.12	0.32	0.03
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1800	1900	1900	1800	3800	1900
c, Capacity [veh/h]	131	244	244	214	244	122	1143	1143	246	2549	1275
d1, Uniform Delay [s]	36.92	35.67	37.98	35.32	37.52	41.28	9.39	9.26	37.94	7.17	5.01
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	78.51	0.72	5.04	0.63	3.34	9.39	1.03	0.96	7.69	0.64	0.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.13	0.31	0.77	0.26	0.68	0.76	0.40	0.38	0.84	0.48	0.04
d, Delay for Lane Group [s/veh]	115.43	36.39	43.02	35.95	40.86	50.67	10.42	10.21	45.62	7.82	5.07
Lane Group LOS	F	D	D	D	D	D	B	B	D	A	A
Critical Lane Group	No	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	5.52	1.55	4.27	1.11	3.67	2.32	4.53	4.26	4.93	4.97	0.29
50th-Percentile Queue Length [ft/ln]	138.08	38.70	106.72	27.79	91.76	58.11	113.31	106.52	123.21	124.31	7.18
95th-Percentile Queue Length [veh/ln]	9.81	2.79	7.66	2.00	6.61	4.18	8.02	7.65	8.57	8.63	0.52
95th-Percentile Queue Length [ft/ln]	245.37	69.66	191.43	50.02	165.17	104.59	200.60	191.15	214.22	215.73	12.93

Movement, Approach, & Intersection Results

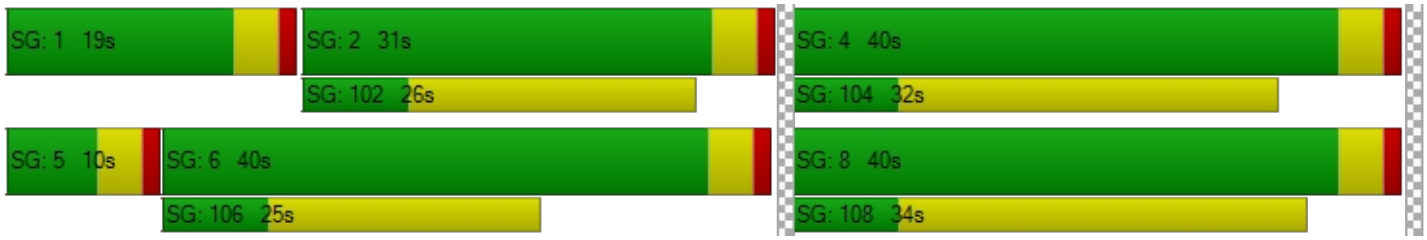
d_M, Delay for Movement [s/veh]	115.43	36.39	43.02	35.95	40.86	40.86	50.67	10.34	10.21	45.62	7.82	5.07
Movement LOS	F	D	D	D	D	D	D	B	B	D	A	A
d_A, Approach Delay [s/veh]	67.87			39.64			14.15			13.07		
Approach LOS	E			D			B			B		
d_I, Intersection Delay [s/veh]	22.62											
Intersection LOS	C											
Intersection V/C	0.542											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.70	34.70	34.70	34.70
l_p,int, Pedestrian LOS Score for Intersection	2.323	2.082	2.989	2.934
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	800	800	600	800
d_b, Bicycle Delay [s]	16.22	16.22	22.07	16.22
l_b,int, Bicycle LOS Score for Intersection	2.238	1.924	2.368	2.774
Bicycle LOS	B	A	B	C

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: State College Boulevard at Birch Street

Control Type:	Signalized	Delay (sec / veh):	38.1
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.877

Intersection Setup

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Base Volume Input [veh/h]	157	473	184	393	430	363	320	893	182	170	1140	749
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	157	473	184	393	430	363	320	893	182	170	1140	749
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	118	46	98	108	91	80	223	46	43	285	187
Total Analysis Volume [veh/h]	157	473	184	393	430	363	320	893	182	170	1140	749
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	10	39	0	23	52	0	16	41	0	12	37	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	28	0	0	30	0	0	28	0	0	26	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	115	115	115	115	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	20	20	15	29	29	12	56	56	8	52	52
g / C, Green / Cycle	0.05	0.17	0.17	0.13	0.25	0.25	0.10	0.49	0.49	0.07	0.45	0.45
(v / s)_i Volume / Saturation Flow Rate	0.04	0.12	0.10	0.11	0.22	0.19	0.09	0.24	0.10	0.05	0.30	0.39
s, saturation flow rate [veh/h]	3500	3800	1900	3500	1900	1900	3500	3800	1900	3500	3800	1900
c, Capacity [veh/h]	185	659	329	463	480	480	367	1861	930	230	1712	856
d1, Uniform Delay [s]	54.03	44.92	43.54	48.81	41.46	39.82	50.74	19.59	16.57	52.79	24.82	28.67
k, delay calibration	0.11	0.11	0.11	0.11	0.12	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.14	1.49	1.48	4.44	6.58	2.54	6.47	0.89	0.47	4.60	2.07	12.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.72	0.56	0.85	0.89	0.76	0.87	0.48	0.20	0.74	0.67	0.87
d, Delay for Lane Group [s/veh]	64.17	46.40	45.03	53.25	48.05	42.36	57.22	20.48	17.04	57.39	26.88	40.78
Lane Group LOS	E	D	D	D	D	D	E	C	B	E	C	D
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.51	6.50	4.93	5.79	12.45	9.86	4.86	8.05	2.82	2.56	12.42	20.99
50th-Percentile Queue Length [ft/ln]	62.80	162.39	123.31	144.68	311.17	246.55	121.52	201.19	70.44	63.94	310.48	524.75
95th-Percentile Queue Length [veh/ln]	4.52	10.68	8.57	9.73	18.23	15.01	8.48	12.70	5.07	4.60	18.20	28.50
95th-Percentile Queue Length [ft/ln]	113.05	266.89	214.37	243.31	455.82	375.31	211.91	317.50	126.79	115.09	454.97	712.59

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	64.17	46.40	45.03	53.25	48.01	42.36	57.22	20.48	17.04	57.39	26.88	40.78
Movement LOS	E	D	D	D	D	D	E	C	B	E	C	D
d_A, Approach Delay [s/veh]	49.52			48.02			28.46			34.46		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	38.12											
Intersection LOS	D											
Intersection V/C	0.877											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	47.05	47.05	47.05	47.05
l_p,int, Pedestrian LOS Score for Intersection	2.828	2.908	3.031	3.097
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	608	834	643	574
d_b, Bicycle Delay [s]	27.84	19.53	26.47	29.25
l_b,int, Bicycle LOS Score for Intersection	2.231	2.538	2.710	3.258
Bicycle LOS	B	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 6: S Associated Road at Birch Street

Control Type:	Signalized	Delay (sec / veh):	28.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.761

Intersection Setup

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Base Volume Input [veh/h]	559	37	403	11	23	11	17	1042	349	332	1472	19
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	559	37	403	11	23	11	17	1042	349	332	1472	19
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	140	9	101	3	6	3	4	261	87	83	368	5
Total Analysis Volume [veh/h]	559	37	403	11	23	11	17	1042	349	332	1472	19
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	8	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups			1,8									
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	6	0	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	30	0	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	28	65	65	0	37	0	10	38	0	17	45	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	26	26	0	26	0	0	27	0	0	26	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No		No		No	No		No	No	
Maximum Recall	No	No	No		No		No	No		No	No	
Pedestrian Recall	No	No	No		No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	21	30	47	5	5	3	65	65	13	75	75
g / C, Green / Cycle	0.18	0.25	0.39	0.04	0.04	0.02	0.54	0.54	0.11	0.63	0.63
(v / s)_i Volume / Saturation Flow Rate	0.16	0.02	0.21	0.01	0.02	0.01	0.38	0.35	0.09	0.39	0.39
s, saturation flow rate [veh/h]	3500	1900	1900	1800	1900	1800	1900	1900	3500	1900	1900
c, Capacity [veh/h]	624	477	747	77	75	40	1027	1027	380	1191	1191
d1, Uniform Delay [s]	48.21	34.34	28.07	55.73	56.40	57.94	20.41	19.59	52.69	13.75	13.74
k, delay calibration	0.11	0.11	0.34	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.83	0.07	1.90	0.84	4.29	7.10	4.00	3.24	6.36	2.49	2.49
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.90	0.08	0.54	0.14	0.46	0.43	0.70	0.65	0.87	0.63	0.63
d, Delay for Lane Group [s/veh]	53.04	34.41	29.98	56.57	60.69	65.04	24.41	22.83	59.05	16.25	16.23
Lane Group LOS	D	C	C	E	E	E	C	C	E	B	B
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	8.57	0.84	9.28	0.34	1.10	0.59	15.55	13.81	5.26	12.54	12.51
50th-Percentile Queue Length [ft/ln]	214.28	21.07	231.98	8.51	27.45	14.71	388.66	345.14	131.44	313.38	312.81
95th-Percentile Queue Length [veh/ln]	13.37	1.52	14.27	0.61	1.98	1.06	22.01	19.90	9.02	18.34	18.31
95th-Percentile Queue Length [ft/ln]	334.32	37.93	356.87	15.33	49.41	26.49	550.31	497.48	225.45	458.54	457.84

Movement, Approach, & Intersection Results

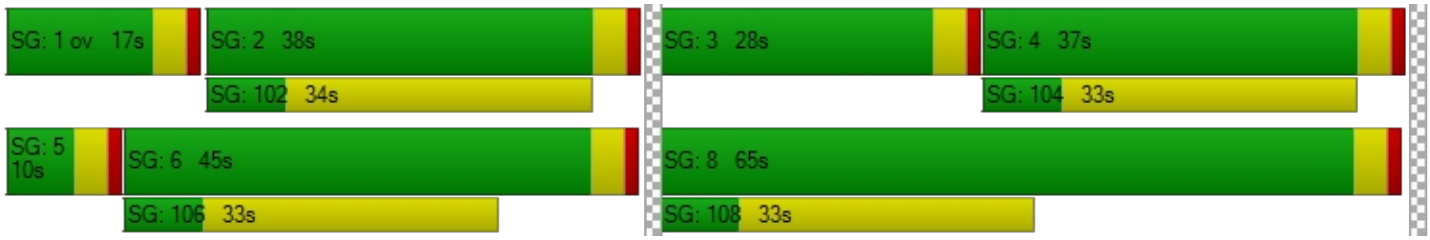
d_M, Delay for Movement [s/veh]	53.04	34.41	29.98	56.57	60.69	60.69	65.04	23.92	22.83	59.05	16.24	16.23
Movement LOS	D	C	C	E	E	E	E	C	C	E	B	B
d_A, Approach Delay [s/veh]	43.05			59.68			24.15			24.03		
Approach LOS	D			E			C			C		
d_I, Intersection Delay [s/veh]	28.89											
Intersection LOS	C											
Intersection V/C	0.761											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.51	49.51	49.51	49.51
l_p,int, Pedestrian LOS Score for Intersection	2.743	1.992	2.986	3.015
Crosswalk LOS	B	A	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1017	550	567	683
d_b, Bicycle Delay [s]	14.51	31.54	30.82	26.01
l_b,int, Bicycle LOS Score for Intersection	3.208	1.634	2.721	3.064
Bicycle LOS	C	A	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 7: Randolph Avenue at Madison Way

Control Type:	Signalized	Delay (sec / veh):	16.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.196

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Base Volume Input [veh/h]	48	368	45	29	290	32	68	4	55	79	4	38
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	48	368	45	29	290	32	68	4	55	79	4	38
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	92	11	7	73	8	17	1	14	20	1	10
Total Analysis Volume [veh/h]	48	368	45	29	290	32	68	4	55	79	4	38
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	6	6	0	6	6	0	0	6	0	0	6	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	23	50	0	10	37	0	0	30	0	0	30	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	15	0	0	12	0	0	19	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	69	69	3	68	68	6	6	6	6
g / C, Green / Cycle	0.05	0.77	0.77	0.04	0.76	0.76	0.06	0.06	0.06	0.06
(v / s)_i Volume / Saturation Flow Rate	0.03	0.11	0.11	0.02	0.09	0.08	0.04	0.03	0.04	0.02
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1900	1800	1900	1800	1900
c, Capacity [veh/h]	86	1456	1456	64	1433	1433	126	123	110	123
d1, Uniform Delay [s]	41.94	2.77	2.76	42.56	2.98	2.97	40.91	40.63	41.17	40.26
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.56	0.21	0.20	4.91	0.16	0.16	3.57	2.85	8.36	1.62
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.56	0.14	0.14	0.45	0.11	0.11	0.54	0.48	0.72	0.34
d, Delay for Lane Group [s/veh]	47.50	2.97	2.96	47.47	3.14	3.13	44.48	43.48	49.53	41.87
Lane Group LOS	D	A	A	D	A	A	D	D	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.17	0.77	0.75	0.71	0.64	0.63	1.57	1.35	1.95	0.94
50th-Percentile Queue Length [ft/ln]	29.14	19.36	18.77	17.84	16.01	15.65	39.36	33.67	48.77	23.41
95th-Percentile Queue Length [veh/ln]	2.10	1.39	1.35	1.28	1.15	1.13	2.83	2.42	3.51	1.69
95th-Percentile Queue Length [ft/ln]	52.45	34.86	33.78	32.12	28.82	28.17	70.84	60.61	87.79	42.14

Movement, Approach, & Intersection Results

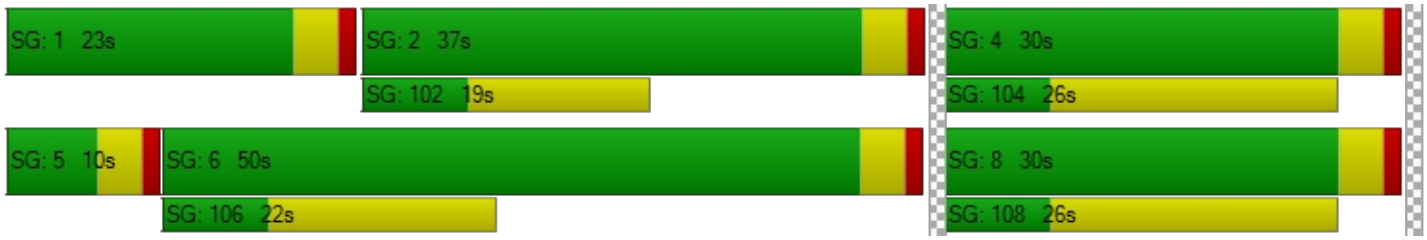
d_M, Delay for Movement [s/veh]	47.50	2.97	2.96	47.47	3.14	3.13	44.48	43.48	43.48	49.53	41.87	41.87
Movement LOS	D	A	A	D	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	7.60			6.80			44.02			46.88		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	16.18											
Intersection LOS	B											
Intersection V/C	0.196											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	34.68	34.68
l_p,int, Pedestrian LOS Score for Intersection	2.584	2.557	2.008	2.004
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1022	733	578	578
d_b, Bicycle Delay [s]	10.76	18.06	22.77	22.77
l_b,int, Bicycle LOS Score for Intersection	1.940	1.849	1.769	1.759
Bicycle LOS	A	A	A	A

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 8: Randolph Avenue at Brea Mall

Control Type:	Signalized	Delay (sec / veh):	18.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.408

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Base Volume Input [veh/h]	17	367	430	56	392	21	18	3	12	328	3	57
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	367	430	56	392	21	18	3	12	328	3	57
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	92	108	14	98	5	5	1	3	82	1	14
Total Analysis Volume [veh/h]	17	367	430	56	392	21	18	3	12	328	3	57
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	6	6	0	6	6	0	0	6	0	0	6	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	29	0	10	29	0	0	30	0	0	31	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	17	0	0	18	0	0	19	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	R	L	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	71	62	62	71	65	65	4	4	13	13
g / C, Green / Cycle	0.71	0.62	0.62	0.71	0.65	0.65	0.04	0.04	0.13	0.13
(v / s)_i Volume / Saturation Flow Rate	0.01	0.19	0.23	0.03	0.11	0.11	0.01	0.01	0.11	0.10
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1900	1800	1900	1800	1900
c, Capacity [veh/h]	1295	1179	1179	1171	1226	1226	66	70	243	257
d1, Uniform Delay [s]	4.30	8.93	9.31	4.39	7.07	7.06	46.99	46.73	42.04	41.61
k, delay calibration	0.11	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.00	0.69	0.87	0.08	0.30	0.29	2.73	1.16	6.39	4.23
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.01	0.31	0.36	0.05	0.17	0.17	0.32	0.17	0.81	0.74
d, Delay for Lane Group [s/veh]	4.30	9.62	10.19	4.47	7.37	7.36	49.72	47.89	48.42	45.84
Lane Group LOS	A	A	B	A	A	A	D	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.09	3.70	4.53	0.33	1.72	1.70	0.56	0.31	5.12	4.79
50th-Percentile Queue Length [ft/ln]	2.27	92.52	113.32	8.15	43.12	42.49	13.94	7.77	127.93	119.70
95th-Percentile Queue Length [veh/ln]	0.16	6.66	8.02	0.59	3.10	3.06	1.00	0.56	8.83	8.38
95th-Percentile Queue Length [ft/ln]	4.09	166.54	200.61	14.67	77.62	76.48	25.10	13.99	220.68	209.41

Movement, Approach, & Intersection Results

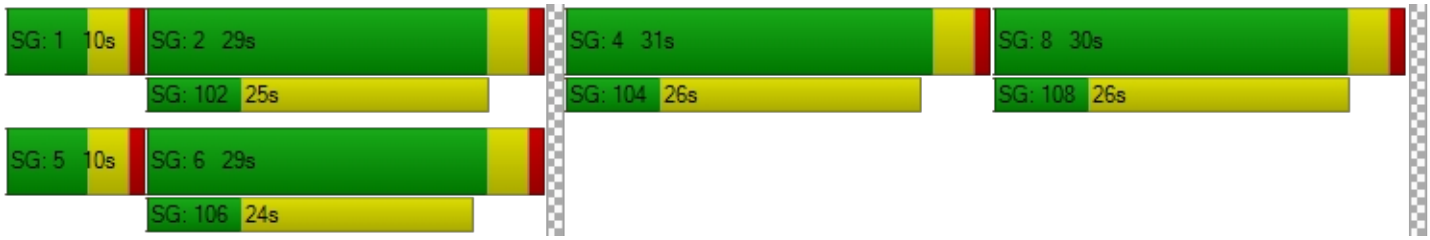
d_M, Delay for Movement [s/veh]	4.30	9.62	10.19	4.47	7.36	7.36	49.72	49.72	47.89	47.39	45.84	45.84
Movement LOS	A	A	B	A	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	9.81			7.02			49.06			47.15		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	18.30											
Intersection LOS	B											
Intersection V/C	0.408											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	39.62	39.62	39.62	39.62
l_p,int, Pedestrian LOS Score for Intersection	2.606	2.482	1.985	2.281
Crosswalk LOS	B	B	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	500	500	520	540
d_b, Bicycle Delay [s]	28.14	28.14	27.40	26.66
l_b,int, Bicycle LOS Score for Intersection	2.231	1.947	1.614	2.200
Bicycle LOS	B	A	A	B

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 9: Brea Mall South at State College Boulevard

Control Type:	Signalized	Delay (sec / veh):	30.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.643

Intersection Setup

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Base Volume Input [veh/h]	151	26	67	56	20	428	620	595	23	104	490	49
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	151	26	67	56	20	428	620	595	23	104	490	49
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	38	7	17	14	5	107	155	149	6	26	123	12
Total Analysis Volume [veh/h]	151	26	67	56	20	428	620	595	23	104	490	49
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	4	5	2	0	1	6	0
Auxiliary Signal Groups						4,5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	6	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	30	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	37	0	0	10	10	41	31	0	42	32	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	26	0	0	0	0	0	20	0	0	21	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No	No	No	No		No	No	
Maximum Recall		No			No	No	No	No		No	No	
Pedestrian Recall		No			No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	C	C	R	L	C	C	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	10	10	10	6	6	49	26	79	79	9	63	63
g / C, Green / Cycle	0.08	0.08	0.08	0.05	0.05	0.41	0.21	0.66	0.66	0.07	0.52	0.52
(v / s)_i Volume / Saturation Flow Rate	0.04	0.06	0.04	0.03	0.01	0.23	0.18	0.16	0.16	0.06	0.14	0.14
s, saturation flow rate [veh/h]	1800	1800	1900	1800	1900	1900	3500	1900	1900	1800	1900	1900
c, Capacity [veh/h]	182	200	155	93	98	783	743	1254	1254	133	991	991
d1, Uniform Delay [s]	52.55	54.08	52.54	55.77	54.61	26.81	45.28	8.31	8.29	54.65	16.06	15.99
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.38	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.16	2.52	1.91	6.18	1.02	2.08	2.54	0.47	0.47	9.44	0.69	0.66
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.35	0.57	0.43	0.60	0.20	0.55	0.83	0.25	0.24	0.78	0.28	0.27
d, Delay for Lane Group [s/veh]	53.71	56.60	54.45	61.95	55.63	28.90	47.82	8.78	8.76	64.09	16.75	16.65
Lane Group LOS	D	E	D	E	E	C	D	A	A	E	B	B
Critical Lane Group	No	Yes	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.89	3.49	2.01	1.82	0.61	9.70	9.07	3.30	3.25	3.44	4.36	4.22
50th-Percentile Queue Length [ft/ln]	47.37	87.25	50.22	45.56	15.23	242.53	226.73	82.41	81.21	86.05	109.02	105.44
95th-Percentile Queue Length [veh/ln]	3.41	6.28	3.62	3.28	1.10	14.81	14.01	5.93	5.85	6.20	7.79	7.59
95th-Percentile Queue Length [ft/ln]	85.27	157.05	90.40	82.00	27.42	370.23	350.20	148.33	146.18	154.88	194.64	189.65

Movement, Approach, & Intersection Results

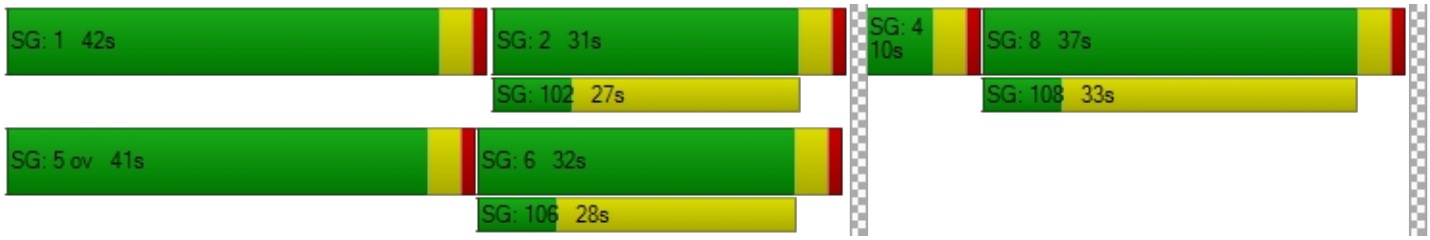
d_M, Delay for Movement [s/veh]	55.32	56.60	54.45	61.95	55.63	28.90	47.82	8.77	8.76	64.09	16.71	16.65
Movement LOS	E	E	D	E	E	C	D	A	A	E	B	B
d_A, Approach Delay [s/veh]	55.25			33.63			28.33			24.37		
Approach LOS	E			C			C			C		
d_I, Intersection Delay [s/veh]	30.87											
Intersection LOS	C											
Intersection V/C	0.643											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.54	49.54	0.00	49.54
l_p,int, Pedestrian LOS Score for Intersection	2.390	2.547	0.000	2.579
Crosswalk LOS	B	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	550	100	450	466
d_b, Bicycle Delay [s]	31.57	54.18	36.07	35.30
l_b,int, Bicycle LOS Score for Intersection	1.962	1.975	2.581	2.090
Bicycle LOS	A	A	B	B

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 10: Harbor Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	70.0
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.045

Intersection Setup

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	786	1305	282	294	1020	439	336	1381	417	455	1699	301
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	786	1305	282	294	1020	439	336	1381	417	455	1699	301
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	197	326	71	74	255	110	84	345	104	114	425	75
Total Analysis Volume [veh/h]	786	1305	282	294	1020	439	336	1381	417	455	1699	301
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	24	47	0	16	39	0	16	42	0	15	41	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	31	0	0	28	0	0	31	0	0	29	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	20	40	40	12	31	31	12	41	41	11	40	40
g / C, Green / Cycle	0.17	0.33	0.33	0.10	0.26	0.26	0.10	0.35	0.35	0.09	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.22	0.23	0.15	0.08	0.18	0.23	0.10	0.32	0.31	0.13	0.30	0.16
s, saturation flow rate [veh/h]	3500	5700	1900	3500	5700	1900	3500	3800	1900	3500	5700	1900
c, Capacity [veh/h]	585	1874	625	351	1494	498	354	1310	655	325	1918	639
d1, Uniform Delay [s]	50.02	35.09	31.77	53.07	39.84	42.54	53.69	37.93	37.14	54.49	37.66	31.41
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.31	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	157.17	0.47	0.51	5.31	0.56	13.24	13.16	12.78	16.34	184.43	6.46	2.48
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.34	0.70	0.45	0.84	0.68	0.88	0.95	0.93	0.89	1.40	0.89	0.47
d, Delay for Lane Group [s/veh]	207.19	35.56	32.28	58.38	40.40	55.78	66.85	50.71	53.48	238.92	44.12	33.89
Lane Group LOS	F	D	C	E	D	E	E	D	D	F	D	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	21.52	11.07	6.54	4.61	9.07	14.23	5.69	19.29	18.84	13.22	16.66	7.32
50th-Percentile Queue Length [ft/ln]	537.88	276.81	163.49	115.34	226.76	355.74	142.13	482.20	471.06	330.60	416.52	182.94
95th-Percentile Queue Length [veh/ln]	33.12	16.53	10.73	8.14	14.01	20.42	9.60	26.49	25.96	21.43	23.36	11.75
95th-Percentile Queue Length [ft/ln]	828.09	413.24	268.34	203.41	350.24	510.41	239.89	662.27	649.03	535.79	583.88	293.84

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	207.19	35.56	32.28	58.38	40.40	55.78	66.85	51.04	53.48	238.92	44.12	33.89
Movement LOS	F	D	C	E	D	E	E	D	D	F	D	C
d_A, Approach Delay [s/veh]	92.02			47.26			54.01			78.97		
Approach LOS	F			D			D			E		
d_I, Intersection Delay [s/veh]	70.03											
Intersection LOS	E											
Intersection V/C	1.045											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.54	49.54	49.54	49.54
l_p,int, Pedestrian LOS Score for Intersection	3.325	3.263	3.356	3.341
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	716	583	633	616
d_b, Bicycle Delay [s]	24.73	30.13	28.04	28.73
l_b,int, Bicycle LOS Score for Intersection	2.865	2.524	2.733	2.910
Bicycle LOS	C	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 11: Puente Street at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	16.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.640

Intersection Setup

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	38	51	93	243	113	228	146	1729	40	114	1930	401
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	38	51	93	243	113	228	146	1729	40	114	1930	401
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	13	23	61	28	57	37	432	10	29	483	100
Total Analysis Volume [veh/h]	38	51	93	243	113	228	146	1729	40	114	1930	401
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	38	0	0	38	0	18	41	0	11	34	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	23	0	0	17	0	0	23	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	15	15	15	15	15	9	56	56	7	54	54
g / C, Green / Cycle	0.17	0.17	0.17	0.17	0.17	0.17	0.10	0.62	0.62	0.08	0.60	0.60
(v / s)_i Volume / Saturation Flow Rate	0.02	0.03	0.05	0.14	0.03	0.12	0.08	0.31	0.32	0.06	0.34	0.21
s, saturation flow rate [veh/h]	1800	1900	1900	1800	3800	1900	1800	3800	1900	1800	5700	1900
c, Capacity [veh/h]	300	316	316	305	632	316	183	2359	1180	143	3413	1138
d1, Uniform Delay [s]	31.98	32.17	32.92	36.19	32.27	35.58	39.56	9.34	9.50	40.73	10.96	9.19
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.19	0.24	0.51	4.76	0.13	3.11	7.71	0.74	1.60	9.53	0.68	0.86
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.13	0.16	0.29	0.80	0.18	0.72	0.80	0.49	0.51	0.79	0.57	0.35
d, Delay for Lane Group [s/veh]	32.17	32.41	33.43	40.96	32.40	38.69	47.27	10.08	11.10	50.26	11.65	10.05
Lane Group LOS	C	C	C	D	C	D	D	B	B	D	B	B
Critical Lane Group	No	No	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.71	0.96	1.80	5.45	1.06	4.93	3.51	5.75	6.35	2.83	7.15	3.89
50th-Percentile Queue Length [ft/ln]	17.84	24.08	45.08	136.35	26.47	123.29	87.67	143.82	158.80	70.83	178.64	97.31
95th-Percentile Queue Length [veh/ln]	1.28	1.73	3.25	9.28	1.91	8.57	6.31	9.69	10.49	5.10	11.53	7.01
95th-Percentile Queue Length [ft/ln]	32.11	43.34	81.14	232.10	47.64	214.33	157.81	242.17	262.14	127.49	288.24	175.16

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.17	32.41	33.43	40.96	32.40	38.69	47.27	10.41	11.10	50.26	11.65	10.05
Movement LOS	C	C	C	D	C	D	D	B	B	D	B	B
d_A, Approach Delay [s/veh]	32.88			38.42			13.24			13.19		
Approach LOS	C			D			B			B		
d_I, Intersection Delay [s/veh]	16.78											
Intersection LOS	B											
Intersection V/C	0.640											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.70	34.70	34.70	34.70
l_p,int, Pedestrian LOS Score for Intersection	2.387	2.530	3.220	3.620
Crosswalk LOS	B	B	C	D
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	755	755	822	666
d_b, Bicycle Delay [s]	17.44	17.44	15.63	20.02
l_b,int, Bicycle LOS Score for Intersection	1.860	2.041	2.613	2.904
Bicycle LOS	A	B	B	C

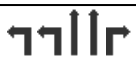
Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 12: Brea Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	41.7
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.888

Intersection Setup

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	553	989	319	277	712	234	263	1965	455	277	1884	207
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	553	989	319	277	712	234	263	1965	455	277	1884	207
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	138	247	80	69	178	59	66	491	114	69	471	52
Total Analysis Volume [veh/h]	553	989	319	277	712	234	263	1965	455	277	1884	207
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	23	47	0	15	39	0	14	44	0	14	44	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	30	0	0	28	0	0	30	0	0	30	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	19	34	34	11	26	26	10	49	49	10	49	49
g / C, Green / Cycle	0.16	0.28	0.28	0.09	0.22	0.22	0.08	0.41	0.41	0.08	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.16	0.17	0.17	0.08	0.19	0.12	0.08	0.34	0.24	0.08	0.33	0.11
s, saturation flow rate [veh/h]	3500	5700	1900	3500	3800	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	556	1606	535	325	820	410	296	2324	775	296	2324	775
d1, Uniform Delay [s]	50.47	37.49	37.23	53.68	45.46	42.13	54.43	32.16	27.71	54.66	31.48	23.65
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	16.48	0.39	1.06	6.33	2.99	1.25	8.91	4.01	3.25	13.19	3.20	0.85
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.99	0.62	0.60	0.85	0.87	0.57	0.89	0.85	0.59	0.94	0.81	0.27
d, Delay for Lane Group [s/veh]	66.95	37.87	38.30	60.01	48.45	43.39	63.34	36.17	30.96	67.86	34.68	24.50
Lane Group LOS	E	D	D	E	D	D	E	D	C	E	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	9.54	8.46	8.23	4.41	10.54	6.35	4.30	17.69	10.77	4.70	16.48	4.09
50th-Percentile Queue Length [ft/ln]	238.52	211.49	205.84	110.13	263.44	158.87	107.50	442.36	269.33	117.59	412.08	102.34
95th-Percentile Queue Length [veh/ln]	14.61	13.23	12.94	7.85	15.86	10.49	7.70	24.59	16.16	8.26	23.14	7.37
95th-Percentile Queue Length [ft/ln]	365.16	330.74	323.49	196.18	396.54	262.23	192.52	614.82	403.90	206.51	578.53	184.21

Movement, Approach, & Intersection Results

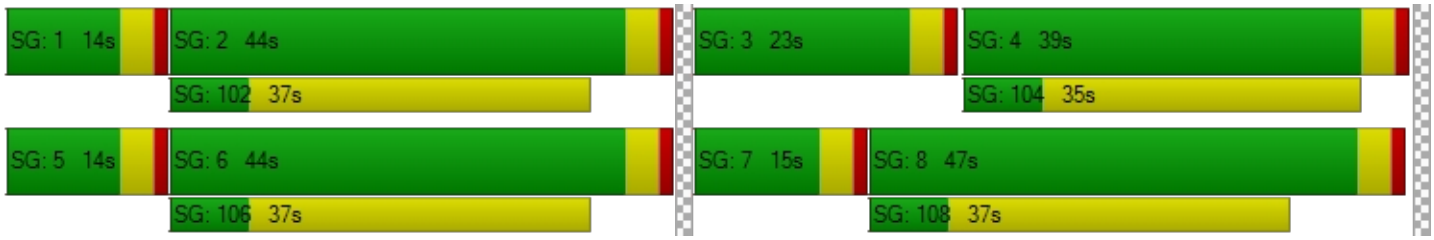
d_M, Delay for Movement [s/veh]	66.95	37.87	38.30	60.01	48.45	43.39	63.34	36.17	30.96	67.86	34.68	24.50
Movement LOS	E	D	D	E	D	D	E	D	C	E	C	C
d_A, Approach Delay [s/veh]	46.59			50.10			37.95			37.67		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	41.67											
Intersection LOS	D											
Intersection V/C	0.888											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.54	49.54	49.54	49.54
l_p,int, Pedestrian LOS Score for Intersection	3.142	3.066	3.443	3.397
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	716	583	666	666
d_b, Bicycle Delay [s]	24.73	30.13	26.69	26.69
l_b,int, Bicycle LOS Score for Intersection	2.583	2.569	3.035	2.862
Bicycle LOS	B	B	C	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 13: Randolph Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	26.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.763

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	61	41	72	369	32	250	333	1903	47	77	2114	385
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	61	41	72	369	32	250	333	1903	47	77	2114	385
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	10	18	92	8	63	83	476	12	19	529	96
Total Analysis Volume [veh/h]	61	41	72	369	32	250	333	1903	47	77	2114	385
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	10	0	0	41	0	19	49	0	10	40	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	29	0	0	28	0	0	29	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	6	6	20	20	13	62	62	6	55	55
g / C, Green / Cycle	0.06	0.06	0.06	0.18	0.18	0.11	0.56	0.56	0.05	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.03	0.03	0.04	0.11	0.15	0.10	0.34	0.35	0.04	0.37	0.20
s, saturation flow rate [veh/h]	1800	1800	1900	3500	1900	3500	3800	1900	1800	5700	1900
c, Capacity [veh/h]	106	106	112	625	339	401	2135	1068	100	2865	955
d1, Uniform Delay [s]	50.17	50.19	50.68	41.52	43.62	47.69	15.95	16.29	51.32	21.65	17.08
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.32	3.40	6.05	0.89	5.28	4.48	1.26	2.77	11.90	1.74	1.27
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.48	0.48	0.64	0.59	0.83	0.83	0.60	0.63	0.77	0.74	0.40
d, Delay for Lane Group [s/veh]	53.49	53.59	56.73	42.42	48.90	52.17	17.21	19.06	63.22	23.39	18.35
Lane Group LOS	D	D	E	D	D	D	B	B	E	C	B
Critical Lane Group	No	No	Yes	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.45	1.47	2.13	4.66	7.86	4.70	10.51	11.61	2.42	14.23	6.27
50th-Percentile Queue Length [ft/ln]	36.20	36.71	53.15	116.58	196.51	117.52	262.80	290.27	60.53	355.76	156.78
95th-Percentile Queue Length [veh/ln]	2.61	2.64	3.83	8.20	12.46	8.26	15.83	17.20	4.36	20.42	10.38
95th-Percentile Queue Length [ft/ln]	65.15	66.07	95.67	205.12	311.46	206.41	395.73	429.97	108.96	510.43	259.45

Movement, Approach, & Intersection Results

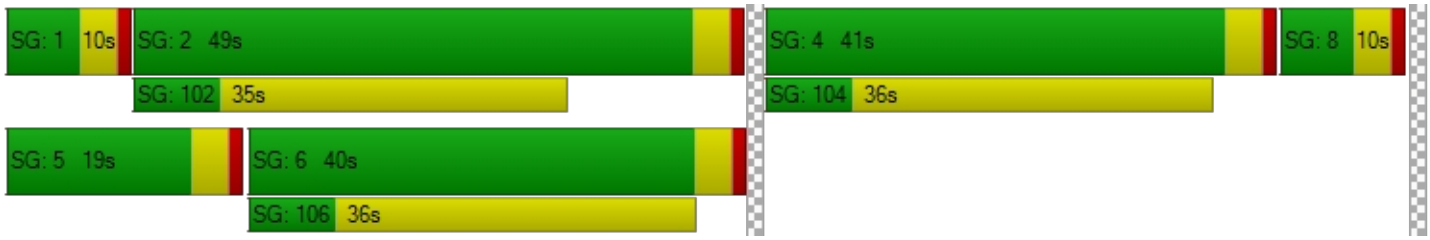
d_M, Delay for Movement [s/veh]	53.50	53.59	56.73	42.42	48.90	48.90	52.17	17.81	19.06	63.22	23.39	18.35
Movement LOS	D	D	E	D	D	D	D	B	B	E	C	B
d_A, Approach Delay [s/veh]	54.86			45.22			22.85			23.83		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	26.83											
Intersection LOS	C											
Intersection V/C	0.763											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	44.58	44.58	44.58	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.221	2.584	3.309	0.000
Crosswalk LOS	B	B	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	109	672	818	654
d_b, Bicycle Delay [s]	49.19	24.25	19.23	24.91
l_b,int, Bicycle LOS Score for Intersection	1.703	2.634	2.815	2.976
Bicycle LOS	A	B	C	C

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 14: State College Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	71.9
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.080

Intersection Setup

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	391	655	471	481	339	103	118	2096	122	497	2061	591
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	391	655	471	481	339	103	118	2096	122	497	2061	591
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	98	164	118	120	85	26	30	524	31	124	515	148
Total Analysis Volume [veh/h]	391	655	471	481	339	103	118	2096	122	497	2061	591
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	29	41	0	27	39	0	10	34	0	18	42	42
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	30	0	0	28	0	0	23	0	0	23	23
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	16	33	33	23	40	40	6	34	34	14	42	69
g / C, Green / Cycle	0.13	0.27	0.27	0.19	0.33	0.33	0.05	0.28	0.28	0.12	0.35	0.58
(v / s)_i Volume / Saturation Flow Rate	0.11	0.17	0.25	0.24	0.12	0.11	0.03	0.29	0.31	0.14	0.36	0.31
s, saturation flow rate [veh/h]	3500	3800	1900	2000	1900	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	468	1037	519	384	629	629	177	1621	540	412	2003	1096
d1, Uniform Delay [s]	50.75	38.36	42.21	48.54	30.56	30.24	56.03	42.98	42.98	53.00	38.96	15.63
k, delay calibration	0.11	0.11	0.32	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.02	0.64	15.74	118.71	0.36	0.31	4.28	24.91	60.23	98.64	27.95	1.91
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.84	0.63	0.91	1.25	0.37	0.34	0.67	1.01	1.07	1.21	1.03	0.54
d, Delay for Lane Group [s/veh]	54.77	39.00	57.95	167.25	30.92	30.55	60.31	67.89	103.22	151.64	66.91	17.54
Lane Group LOS	D	D	E	F	C	C	E	F	F	F	F	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.99	8.55	15.65	12.05	5.14	4.69	1.86	19.56	24.87	11.83	24.45	10.20
50th-Percentile Queue Length [ft/ln]	149.71	213.66	391.16	301.14	128.59	117.14	46.60	489.12	621.66	295.80	611.27	254.94
95th-Percentile Queue Length [veh/ln]	10.00	13.34	22.13	19.61	8.86	8.24	3.36	27.00	34.58	18.81	33.22	15.43
95th-Percentile Queue Length [ft/ln]	250.04	333.52	553.34	490.30	221.57	205.89	83.88	674.93	864.50	470.30	830.52	385.87

Movement, Approach, & Intersection Results

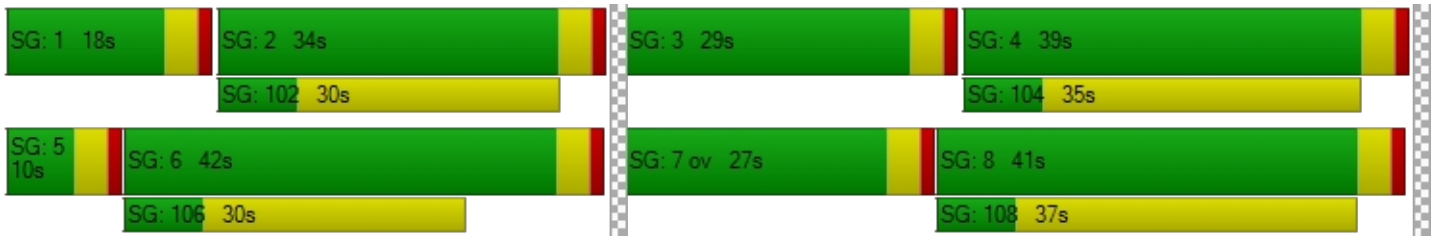
d_M, Delay for Movement [s/veh]	54.77	39.00	57.95	167.25	30.80	30.55	60.31	75.62	103.22	151.64	66.91	17.54
Movement LOS	D	D	E	F	C	C	E	E	F	F	F	B
d_A, Approach Delay [s/veh]	48.95			101.88			76.29			71.02		
Approach LOS	D			F			E			E		
d_I, Intersection Delay [s/veh]	71.94											
Intersection LOS	E											
Intersection V/C	1.080											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.54	49.54	49.54	49.54
l_p,int, Pedestrian LOS Score for Intersection	2.952	2.838	3.393	3.584
Crosswalk LOS	C	C	C	D
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	616	583	500	633
d_b, Bicycle Delay [s]	28.73	30.13	33.78	28.04
l_b,int, Bicycle LOS Score for Intersection	2.811	2.321	2.523	3.292
Bicycle LOS	C	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 15: SR-57 SB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	18.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.813

Intersection Setup

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	0	0	0	764	0	614	0	1913	1142	0	2727	475
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	764	0	614	0	1913	1142	0	2727	475
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	191	0	154	0	478	286	0	682	119
Total Analysis Volume [veh/h]	0	0	0	764	0	614	0	1913	1142	0	2727	475
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	7	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	6	0	0	0	6	0	0	6	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	64	0	0	0	26	0	0	26	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	15	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	C
C, Cycle Length [s]		90	90	90	90	90
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		28	28	28	54	54
g / C, Green / Cycle		0.31	0.31	0.31	0.60	0.60
(v / s)_i Volume / Saturation Flow Rate		0.26	0.26	0.24	0.34	0.48
s, saturation flow rate [veh/h]		1750	1750	1900	5700	5700
c, Capacity [veh/h]		547	547	594	3410	3410
d1, Uniform Delay [s]		28.77	28.77	27.99	10.91	13.89
k, delay calibration		0.11	0.11	0.11	0.50	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		3.55	3.55	2.19	0.67	2.06
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.84	0.84	0.77	0.56	0.80
d, Delay for Lane Group [s/veh]		32.32	32.32	30.17	11.58	15.95
Lane Group LOS		C	C	C	B	B
Critical Lane Group		Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]		9.43	9.43	9.00	7.09	13.13
50th-Percentile Queue Length [ft/ln]		235.64	235.64	225.11	177.14	328.27
95th-Percentile Queue Length [veh/ln]		14.46	14.46	13.93	11.45	19.07
95th-Percentile Queue Length [ft/ln]		361.51	361.51	348.14	286.27	476.84

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	32.32	0.00	30.71	0.00	11.58	0.00	0.00	15.95	0.00
Movement LOS				C		C		B			B	
d_A, Approach Delay [s/veh]	0.00			31.60			11.58			15.95		
Approach LOS	A			C			B			B		
d_I, Intersection Delay [s/veh]	18.15											
Intersection LOS	B											
Intersection V/C	0.813											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	34.63	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	2.466	0.000	0.000
Crosswalk LOS	F	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1335	489	489
d_b, Bicycle Delay [s]	44.96	4.98	25.65	25.65
l_b,int, Bicycle LOS Score for Intersection	4.132	3.833	2.612	3.059
Bicycle LOS	D	D	B	C

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 16: SR-57 NB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	26.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.824

Intersection Setup

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	1151	64	506	0	0	193	183	2129	425	0	2807	38
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1151	64	506	0	0	193	183	2129	425	0	2807	38
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	288	16	127	0	0	48	46	532	106	0	702	10
Total Analysis Volume [veh/h]	1151	64	506	0	0	193	183	2129	425	0	2807	38
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Overlap	Protecte	Permiss	Unsigna	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	0	5	5	2	0	0	6	0
Auxiliary Signal Groups						5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	6	0	0	0	6	6	6	0	0	6	0
Maximum Green [s]	0	30	0	0	0	30	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	1.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	44	0	0	0	21	21	56	0	0	35	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	22	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No				No		No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No				No	No	No			No	
Maximum Recall		No				No	No	No			No	
Pedestrian Recall		No				No	No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	R	L	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	30	30	30	12	12	62	45	45
g / C, Green / Cycle	0.30	0.30	0.30	0.12	0.12	0.62	0.45	0.45
(v / s)_i Volume / Saturation Flow Rate	0.24	0.25	0.23	0.05	0.10	0.37	0.37	0.37
s, saturation flow rate [veh/h]	3500	1750	1900	3800	1800	5700	5700	1900
c, Capacity [veh/h]	1059	530	575	469	222	3519	2587	862
d1, Uniform Delay [s]	32.09	32.40	31.57	40.47	42.76	11.69	23.84	23.84
k, delay calibration	0.11	0.18	0.14	0.11	0.11	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.45	5.43	2.79	0.58	7.45	0.78	3.15	8.83
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.80	0.82	0.76	0.41	0.82	0.60	0.82	0.82
d, Delay for Lane Group [s/veh]	33.54	37.83	34.36	41.05	50.22	12.47	26.98	32.67
Lane Group LOS	C	D	C	D	D	B	C	C
Critical Lane Group	No	Yes	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	9.44	10.39	9.79	2.22	4.83	9.03	14.71	16.08
50th-Percentile Queue Length [ft/ln]	235.93	259.74	244.79	55.51	120.84	225.67	367.87	401.92
95th-Percentile Queue Length [veh/ln]	14.48	15.68	14.92	4.00	8.44	13.95	21.01	22.65
95th-Percentile Queue Length [ft/ln]	361.89	391.89	373.09	99.91	210.98	348.85	525.15	566.31

Movement, Approach, & Intersection Results

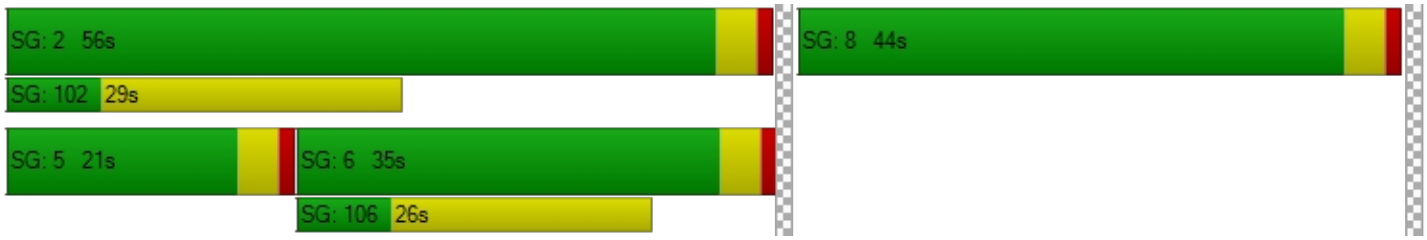
d_M, Delay for Movement [s/veh]	34.65	37.83	34.88	0.00	0.00	41.05	50.22	12.47	0.00	0.00	28.35	32.67
Movement LOS	C	D	C			D	D	B			C	C
d_A, Approach Delay [s/veh]	34.84			41.05			15.45			28.41		
Approach LOS	C			D			B			C		
d_I, Intersection Delay [s/veh]	26.08											
Intersection LOS	C											
Intersection V/C	0.824											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	39.61	39.61	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.640	2.100	0.000	0.000
Crosswalk LOS	B	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	800	340	1040	620
d_b, Bicycle Delay [s]	18.00	34.45	11.52	23.81
l_b,int, Bicycle LOS Score for Intersection	4.399	1.560	2.831	2.733
Bicycle LOS	E	A	C	B

Sequence

Ring 1	-	2	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 17: Associated Road at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	48.5
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.944

Intersection Setup

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	250	299	102	335	402	292	310	2167	160	210	1992	213
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	250	299	102	335	402	292	310	2167	160	210	1992	213
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	63	75	26	84	101	73	78	542	40	53	498	53
Total Analysis Volume [veh/h]	250	299	102	335	402	292	310	2167	160	210	1992	213
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	13	39	0	16	42	0	26	46	0	19	39	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	28	0	0	29	0	0	26	0	0	25	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	25	25	12	28	28	22	52	52	15	45	45
g / C, Green / Cycle	0.08	0.21	0.21	0.10	0.23	0.23	0.18	0.43	0.43	0.13	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.07	0.11	0.10	0.10	0.21	0.15	0.17	0.40	0.42	0.12	0.29	0.30
s, saturation flow rate [veh/h]	3500	1900	1900	3500	1900	1900	1800	3800	1900	1800	5700	1900
c, Capacity [veh/h]	267	399	399	354	446	446	331	1634	817	227	2122	707
d1, Uniform Delay [s]	55.19	42.12	41.73	53.67	44.62	41.57	48.35	32.69	33.55	51.96	33.22	33.72
k, delay calibration	0.11	0.11	0.11	0.11	0.22	0.11	0.22	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	14.29	1.06	0.91	12.79	12.59	1.64	20.92	11.69	25.53	14.98	2.80	9.26
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.94	0.52	0.48	0.95	0.90	0.65	0.94	0.94	0.97	0.93	0.77	0.80
d, Delay for Lane Group [s/veh]	69.48	43.18	42.63	66.47	57.21	43.21	69.27	44.38	59.08	66.94	36.03	42.98
Lane Group LOS	E	D	D	E	E	D	E	D	E	E	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.29	5.61	5.13	5.65	13.10	8.01	11.04	23.31	27.79	7.19	14.37	16.36
50th-Percentile Queue Length [ft/ln]	107.29	140.36	128.17	141.27	327.55	200.34	275.97	582.79	694.71	179.78	359.37	409.08
95th-Percentile Queue Length [veh/ln]	7.69	9.50	8.84	9.55	19.04	12.66	16.49	31.23	36.43	11.59	20.59	23.00
95th-Percentile Queue Length [ft/ln]	192.22	237.51	221.01	238.73	475.95	316.41	412.20	780.74	910.84	289.73	514.82	574.93

Movement, Approach, & Intersection Results

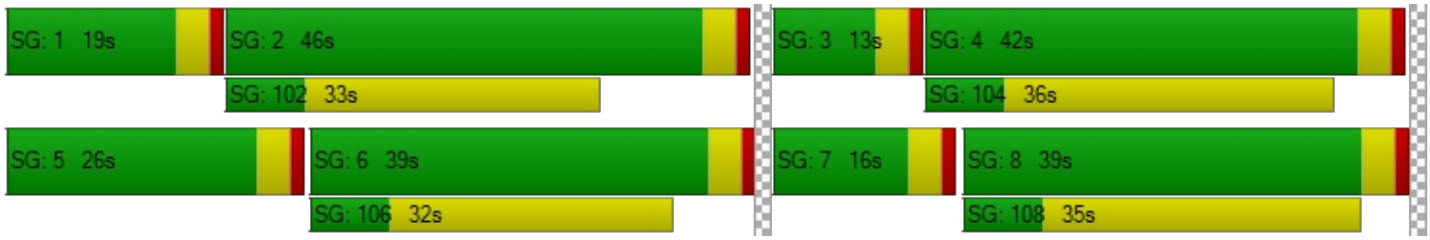
d_M, Delay for Movement [s/veh]	69.48	43.02	42.63	66.47	57.21	43.21	69.27	48.69	59.08	66.94	37.26	42.98
Movement LOS	E	D	D	E	E	D	E	D	E	E	D	D
d_A, Approach Delay [s/veh]	53.12			56.25			51.74			40.35		
Approach LOS	D			E			D			D		
d_I, Intersection Delay [s/veh]	48.47											
Intersection LOS	D											
Intersection V/C	0.944											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.54	49.54	49.54	49.54
l_p,int, Pedestrian LOS Score for Intersection	2.591	2.767	3.369	3.351
Crosswalk LOS	B	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	583	633	700	583
d_b, Bicycle Delay [s]	30.13	28.04	25.38	30.13
l_b,int, Bicycle LOS Score for Intersection	2.097	3.257	3.010	2.556
Bicycle LOS	B	C	C	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 18: Castlegate Lane/Placentia Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	28.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.847

Intersection Setup

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	290	54	310	29	26	16	22	2188	318	268	2258	66
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	290	54	310	29	26	16	22	2188	318	268	2258	66
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	73	14	78	7	7	4	6	547	80	67	565	17
Total Analysis Volume [veh/h]	290	54	310	29	26	16	22	2188	318	268	2258	66
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	28	0	0	10	0	10	32	0	35	57	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	15	0	0	0	0	0	21	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	C
C, Cycle Length [s]	105	105	105	105	105	105	105	105	105	105	105
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	20	20	20	5	5	3	46	46	18	61	61
g / C, Green / Cycle	0.19	0.19	0.19	0.05	0.05	0.03	0.44	0.44	0.17	0.58	0.58
(v / s)_i Volume / Saturation Flow Rate	0.10	0.10	0.16	0.02	0.02	0.01	0.38	0.17	0.15	0.40	0.42
s, saturation flow rate [veh/h]	1750	1750	1900	1800	1900	1800	5700	1900	1800	3800	1900
c, Capacity [veh/h]	326	326	354	92	97	51	2511	837	306	2213	1106
d1, Uniform Delay [s]	38.56	38.62	41.58	48.12	48.41	50.25	26.70	19.76	42.54	15.33	15.80
k, delay calibration	0.11	0.11	0.14	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.30	1.34	8.47	1.95	3.05	5.74	4.51	1.31	7.85	1.79	4.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.52	0.53	0.88	0.32	0.43	0.43	0.87	0.38	0.88	0.69	0.72
d, Delay for Lane Group [s/veh]	39.87	39.96	50.05	50.07	51.46	55.99	31.21	21.07	50.39	17.11	19.86
Lane Group LOS	D	D	D	D	D	E	C	C	D	B	B
Critical Lane Group	No	No	Yes	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.06	4.13	8.55	0.78	1.15	0.65	16.96	5.44	7.39	12.41	14.02
50th-Percentile Queue Length [ft/ln]	101.60	103.15	213.82	19.54	28.71	16.22	424.01	135.98	184.74	310.37	350.52
95th-Percentile Queue Length [veh/ln]	7.32	7.43	13.35	1.41	2.07	1.17	23.71	9.26	11.85	18.19	20.16
95th-Percentile Queue Length [ft/ln]	182.89	185.66	333.72	35.17	51.67	29.19	592.86	231.60	296.19	454.83	504.05

Movement, Approach, & Intersection Results

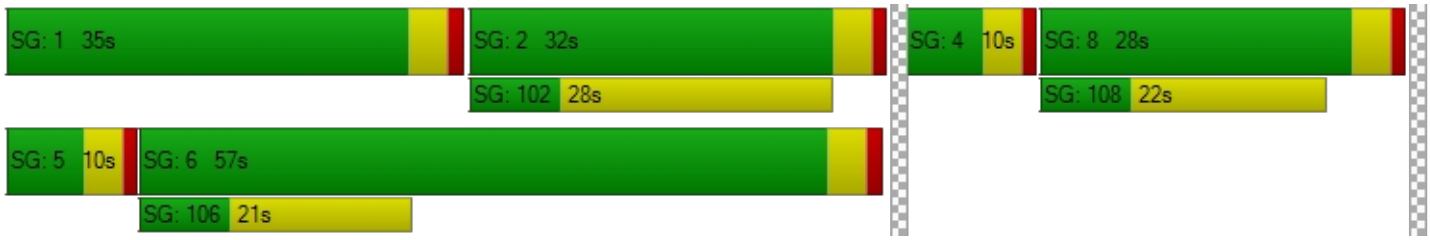
d_M, Delay for Movement [s/veh]	39.90	39.96	50.05	50.07	51.46	51.46	55.99	31.21	21.07	50.39	18.00	19.86
Movement LOS	D	D	D	D	D	D	E	C	C	D	B	B
d_A, Approach Delay [s/veh]	44.72			50.89			30.15			21.40		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	28.15											
Intersection LOS	C											
Intersection V/C	0.847											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	42.11	42.11	0.00	42.11
l_p,int, Pedestrian LOS Score for Intersection	2.447	2.017	0.000	3.314
Crosswalk LOS	B	B	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	457	114	533	1009
d_b, Bicycle Delay [s]	31.27	46.70	28.26	12.90
l_b,int, Bicycle LOS Score for Intersection	2.639	1.677	2.950	2.985
Bicycle LOS	B	A	C	C

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Brea Mall Expansion, Brea

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Report File: N:\...\Sat 2045+P.pdf

Scenario 15 Sat MD 2045+P
4/18/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State College Boulevard at Lambert Road	Signalized	HCM 6th Edition	WB Left	0.852	49.3	D
2	SR-57 SB Ramps at Lambert Road	Signalized	HCM 6th Edition	WB Left	0.791	30.2	C
3	SR-57 NB Ramps at Lambert Road	Signalized	HCM 6th Edition	NB Left	0.775	19.5	B
4	Randolph Avenue at Birch Street	Signalized	HCM 6th Edition	EB Left	0.501	19.1	B
5	State College Boulevard at Birch Street	Signalized	HCM 6th Edition	EB Left	0.786	41.7	D
6	S Associated Road at Birch Street	Signalized	HCM 6th Edition	EB Left	0.598	21.1	C
7	Randolph Avenue at Madison Way	Signalized	HCM 6th Edition	WB Left	0.271	16.8	B
8	Randolph Avenue at Brea Mall	Signalized	HCM 6th Edition	EB Left	0.529	24.4	C
9	Brea Mall South at State College Boulevard	Signalized	HCM 6th Edition	WB Left	0.833	32.4	C
10	Harbor Boulevard at Imperial Highway	Signalized	HCM 6th Edition	SB Left	0.896	53.4	D
11	Puente Street at Imperial Highway	Signalized	HCM 6th Edition	EB Left	0.481	13.2	B
12	Brea Boulevard at Imperial Highway	Signalized	HCM 6th Edition	WB Left	0.874	45.0	D
13	Randolph Avenue at Imperial Highway	Signalized	HCM 6th Edition	WB Left	0.927	47.2	D
14	State College Boulevard at Imperial Highway	Signalized	HCM 6th Edition	SB Left	1.408	148.1	F
15	SR-57 SB Ramps at Imperial Highway	Signalized	HCM 6th Edition	SB Left	0.845	20.7	C
16	SR-57 NB Ramps at Imperial Highway	Signalized	HCM 6th Edition	EB Left	0.952	42.6	D
17	Associated Road at Imperial Highway	Signalized	HCM 6th Edition	WB Left	0.842	35.9	D
18	Castlegate Lane/Placentia	Signalized	HCM 6th	EB Left	0.811	23.7	C

16	Avenue at Imperial Highway	Signalized	Edition	EB Left	0.611	23.7	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: State College Boulevard at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	49.3
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.852

Intersection Setup

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	State College Boulevard			State College Boulevard			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	154	294	417	574	408	5	20	1322	290	784	1745	789
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	154	294	417	574	408	5	20	1322	290	784	1745	789
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	74	104	144	102	1	5	331	73	196	436	197
Total Analysis Volume [veh/h]	154	294	417	574	408	5	20	1322	290	784	1745	789
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	10	32	0	22	44	0	10	40	0	26	56	56
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	0	0	0	33	0	0	28	0	0	22	22
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	6	20	20	20	18	31	31	3	44	44	22	64	86
g / C, Green / Cycle	0.05	0.16	0.16	0.16	0.15	0.26	0.26	0.02	0.37	0.37	0.18	0.53	0.71
(v / s)_i Volume / Saturation Flow Rate	0.04	0.14	0.12	0.12	0.16	0.11	0.11	0.01	0.21	0.21	0.22	0.31	0.42
s, saturation flow rate [veh/h]	3500	1900	1900	1900	3500	1900	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	178	309	309	309	526	498	498	88	2110	703	642	3012	1353
d1, Uniform Delay [s]	56.58	48.79	47.80	47.66	51.01	36.66	36.64	57.36	30.27	30.09	49.02	19.24	8.51
k, delay calibration	0.11	0.12	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.90	6.94	3.39	3.15	48.47	0.55	0.55	1.28	1.15	3.25	102.57	0.82	1.84
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.87	0.84	0.74	0.72	1.09	0.42	0.41	0.23	0.58	0.56	1.22	0.58	0.58
d, Delay for Lane Group [s/veh]	68.48	55.73	51.19	50.81	99.47	37.21	37.19	58.65	31.42	33.34	151.58	20.06	10.36
Lane Group LOS	E	E	D	D	F	D	D	E	C	C	F	C	B
Critical Lane Group	No	Yes	No	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.61	8.18	6.76	6.58	11.42	5.12	5.09	0.31	9.55	9.70	18.72	10.97	9.73
50th-Percentile Queue Length [ft/ln]	65.29	204.4	168.8	164.4	285.51	127.95	127.33	7.84	238.75	242.61	468.07	274.32	243.30
95th-Percentile Queue Length [veh/ln]	4.70	12.87	11.02	10.78	17.65	8.83	8.79	0.56	14.62	14.81	28.40	16.41	14.85
95th-Percentile Queue Length [ft/ln]	117.5	321.7	275.4	269.6	441.25	220.70	219.86	14.12	365.45	370.34	709.96	410.14	371.21

Movement, Approach, & Intersection Results

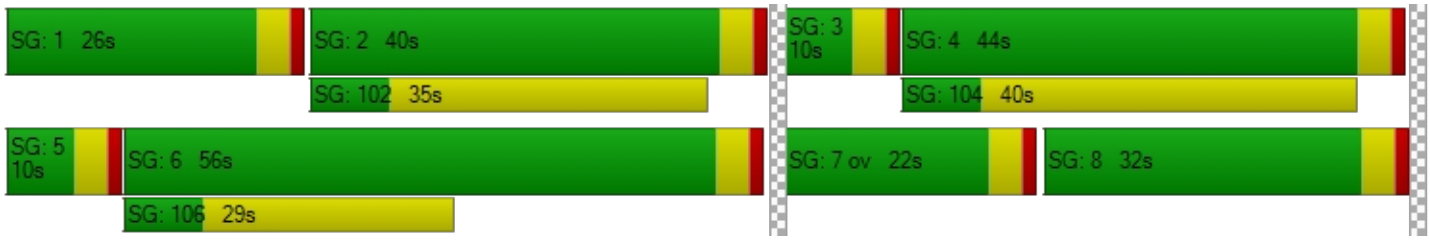
d_M, Delay for Movement [s/veh]	68.48	55.22	50.98	99.47	37.20	37.19	58.65	31.58	33.34	151.58	20.06	10.36
Movement LOS	E	E	D	F	D	D	E	C	C	F	C	B
d_A, Approach Delay [s/veh]	55.54			73.42			32.22			48.83		
Approach LOS	E			E			C			D		
d_I, Intersection Delay [s/veh]	49.27											
Intersection LOS	D											
Intersection V/C	0.852											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.52	49.52	49.52	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.935	2.806	3.246	0.000
Crosswalk LOS	C	C	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	467	666	600	866
d_b, Bicycle Delay [s]	35.28	26.68	29.41	19.28
l_b,int, Bicycle LOS Score for Intersection	2.273	2.374	2.233	3.385
Bicycle LOS	B	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: SR-57 SB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	30.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.791

Intersection Setup

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 SB Ramps			SR-57 SB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	0	0	0	900	0	1311	0	1689	609	246	2003	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	900	0	1311	0	1689	609	246	2003	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	225	0	328	0	422	152	62	501	0
Total Analysis Volume [veh/h]	0	0	0	900	0	1311	0	1689	609	246	2003	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	7	0	0	0	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	6	0	0	0	6	0	6	6	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	30	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	79	0	0	0	23	0	18	41	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	12	0	0	20	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall				No				No		No	No	
Maximum Recall				No				No		No	No	
Pedestrian Recall				No				No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	R	C	R	L	C
C, Cycle Length [s]		120	120	120	120	120	120
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		52	52	46	46	11	60
g / C, Green / Cycle		0.43	0.43	0.38	0.38	0.09	0.50
(v / s)_i Volume / Saturation Flow Rate		0.26	0.35	0.30	0.16	0.07	0.35
s, saturation flow rate [veh/h]		3500	3800	5700	3800	3500	5700
c, Capacity [veh/h]		1509	1639	2171	1447	307	2862
d1, Uniform Delay [s]		26.11	29.62	32.66	27.37	53.67	22.92
k, delay calibration		0.11	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		0.38	0.94	2.83	0.90	4.81	1.45
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.60	0.80	0.78	0.42	0.80	0.70
d, Delay for Lane Group [s/veh]		26.49	30.55	35.49	28.27	58.48	24.38
Lane Group LOS		C	C	D	C	E	C
Critical Lane Group		No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]		9.81	16.29	14.77	6.62	3.85	14.50
50th-Percentile Queue Length [ft/ln]		245.25	407.23	369.19	165.42	96.15	362.55
95th-Percentile Queue Length [veh/ln]		14.95	22.91	21.07	10.84	6.92	20.75
95th-Percentile Queue Length [ft/ln]		373.67	572.70	526.75	270.88	173.07	518.69

Movement, Approach, & Intersection Results

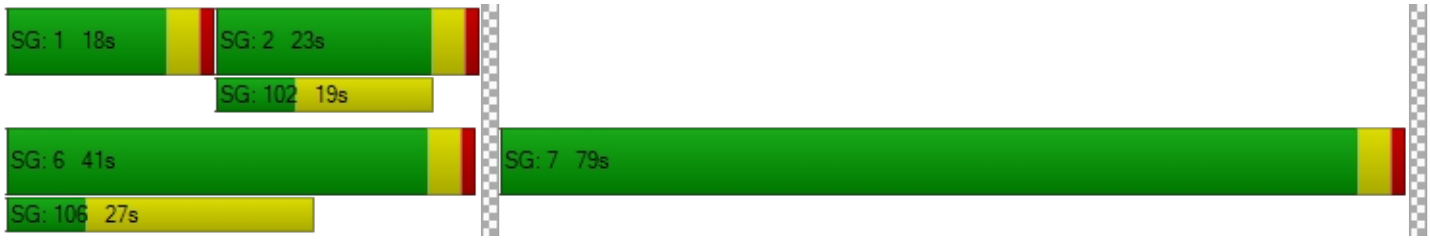
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	26.49	0.00	30.55	0.00	35.49	28.27	58.48	24.38	0.00
Movement LOS				C		C		D	C	E	C	
d_A, Approach Delay [s/veh]	0.00			28.90			33.58			28.11		
Approach LOS	A			C			C			C		
d_I, Intersection Delay [s/veh]	30.23											
Intersection LOS	C											
Intersection V/C	0.791											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.49	49.49	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.145	2.684	0.000	0.000
Crosswalk LOS	B	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1250	317	617
d_b, Bicycle Delay [s]	59.98	8.43	42.49	28.69
l_b,int, Bicycle LOS Score for Intersection	4.132	1.560	2.824	2.797
Bicycle LOS	D	A	C	C

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: SR-57 NB Ramps at Lambert Road

Control Type:	Signalized	Delay (sec / veh):	19.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.775

Intersection Setup

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No						No			No		
Crosswalk	Yes			No			No			No		

Volumes

Name	SR-57 NB Ramps			SR-57 NB Ramps			Lambert Road			Lambert Road		
Base Volume Input [veh/h]	1159	0	519	0	0	0	0	1831	758	0	1068	473
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1159	0	519	0	0	0	0	1831	758	0	1068	473
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000
Total 15-Minute Volume [veh/h]	290	0	130	0	0	0	0	458	190	0	267	0
Total Analysis Volume [veh/h]	1159	0	519	0	0	0	0	1831	758	0	1068	0
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Permiss	Split	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna
Signal Group	3	0	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	0	0	0	0	0	0	6	0	0	6	0
Maximum Green [s]	30	0	0	0	0	0	0	30	0	0	30	0
Amber [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	54	0	0	0	0	0	0	36	0	0	36	0
Vehicle Extension [s]	3.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	25	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No							No			No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No							No			No	
Maximum Recall	No							No			No	
Pedestrian Recall	No							No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R		C	C	R	C
C, Cycle Length [s]	90	90		90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00		0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	35	35		47	47	47	47
g / C, Green / Cycle	0.39	0.39		0.52	0.52	0.52	0.52
(v / s)_i Volume / Saturation Flow Rate	0.33	0.27		0.34	0.34	0.34	0.19
s, saturation flow rate [veh/h]	3500	1900		3800	1900	1900	5700
c, Capacity [veh/h]	1364	740		1981	990	990	2971
d1, Uniform Delay [s]	25.01	23.02		15.61	15.61	15.61	12.67
k, delay calibration	0.11	0.11		0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00		1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.58	1.22		1.70	3.36	3.36	0.34
d3, Initial Queue Delay [s]	0.00	0.00		0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00		1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00		1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.70		0.65	0.65	0.65	0.36
d, Delay for Lane Group [s/veh]	26.59	24.24		17.31	18.97	18.97	13.01
Lane Group LOS	C	C		B	B	B	B
Critical Lane Group	Yes	No		Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	10.99	9.07		9.38	9.84	9.84	4.07
50th-Percentile Queue Length [ft/ln]	274.87	226.66		234.60	246.02	246.02	101.83
95th-Percentile Queue Length [veh/ln]	16.43	14.00		14.41	14.99	14.99	7.33
95th-Percentile Queue Length [ft/ln]	410.83	350.11		360.20	374.64	374.64	183.29

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	26.59	0.00	24.24	0.00	0.00	0.00	0.00	17.40	18.97	0.00	13.01	0.00
Movement LOS	C		C					B	B		B	
d_A, Approach Delay [s/veh]	25.86			0.00			18.14			13.01		
Approach LOS	C			A			B			B		
d_I, Intersection Delay [s/veh]	19.54											
Intersection LOS	B											
Intersection V/C	0.775											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.63	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.774	0.000	0.000	0.000
Crosswalk LOS	C	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1112	0	712	712
d_b, Bicycle Delay [s]	8.86	44.96	18.65	18.65
l_b,int, Bicycle LOS Score for Intersection	1.560	4.132	2.984	2.147
Bicycle LOS	A	D	C	B

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 4: Randolph Avenue at Birch Street

Control Type:	Signalized	Delay (sec / veh):	19.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.501

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Birch Street			Birch Street		
Base Volume Input [veh/h]	120	82	194	63	40	92	93	739	140	169	895	27
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	120	82	194	63	40	92	93	739	140	169	895	27
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	30	21	49	16	10	23	23	185	35	42	224	7
Total Analysis Volume [veh/h]	120	82	194	63	40	92	93	739	140	169	895	27
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	38	0	0	38	0	23	30	0	22	29	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	25	0	0	19	0	0	18	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	12	12	12	12	6	56	56	10	60	60
g / C, Green / Cycle	0.13	0.13	0.13	0.13	0.13	0.07	0.62	0.62	0.12	0.67	0.67
(v / s)_i Volume / Saturation Flow Rate	0.07	0.04	0.10	0.04	0.07	0.05	0.24	0.22	0.09	0.24	0.01
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1800	1900	1900	1800	3800	1900
c, Capacity [veh/h]	170	250	250	215	250	124	1177	1177	209	2532	1266
d1, Uniform Delay [s]	36.40	35.51	37.84	35.21	36.51	41.18	8.56	8.42	38.86	6.56	5.09
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.31	0.76	5.14	0.75	1.73	8.72	0.95	0.87	7.34	0.39	0.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.71	0.33	0.78	0.29	0.53	0.75	0.38	0.36	0.81	0.35	0.02
d, Delay for Lane Group [s/veh]	41.71	36.27	42.97	35.95	38.24	49.90	9.51	9.29	46.21	6.95	5.12
Lane Group LOS	D	D	D	D	D	D	A	A	D	A	A
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.67	1.67	4.43	1.28	2.79	2.30	4.23	3.92	4.02	3.31	0.16
50th-Percentile Queue Length [ft/ln]	66.86	41.71	110.74	31.88	69.85	57.59	105.69	98.12	100.38	82.83	3.99
95th-Percentile Queue Length [veh/ln]	4.81	3.00	7.88	2.30	5.03	4.15	7.60	7.06	7.23	5.96	0.29
95th-Percentile Queue Length [ft/ln]	120.35	75.07	197.03	57.39	125.74	103.67	189.99	176.62	180.68	149.10	7.18

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.71	36.27	42.97	35.95	38.24	38.24	49.90	9.42	9.29	46.21	6.95	5.12
Movement LOS	D	D	D	D	D	D	D	A	A	D	A	A
d_A, Approach Delay [s/veh]	41.20			37.50			13.28			12.98		
Approach LOS	D			D			B			B		
d_I, Intersection Delay [s/veh]	19.10											
Intersection LOS	B											
Intersection V/C	0.501											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.70	34.70	34.70	34.70
l_p,int, Pedestrian LOS Score for Intersection	2.312	2.069	2.875	2.881
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	755	755	577	555
d_b, Bicycle Delay [s]	17.44	17.44	22.78	23.49
l_b,int, Bicycle LOS Score for Intersection	2.213	1.881	2.362	2.460
Bicycle LOS	B	A	B	B

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 5: State College Boulevard at Birch Street

Control Type:	Signalized	Delay (sec / veh):	41.7
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.786

Intersection Setup

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Birch Street			Birch Street		
Base Volume Input [veh/h]	165	353	212	301	651	531	321	827	180	185	795	270
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	165	353	212	301	651	531	321	827	180	185	795	270
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	41	88	53	75	163	133	80	207	45	46	199	68
Total Analysis Volume [veh/h]	165	353	212	301	651	531	321	827	180	185	795	270
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	10	39	0	23	52	0	14	42	0	11	39	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	28	0	0	30	0	0	28	0	0	26	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	115	115	115	115	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	35	35	12	41	41	10	45	45	7	42	42
g / C, Green / Cycle	0.05	0.30	0.30	0.11	0.36	0.36	0.09	0.39	0.39	0.06	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.05	0.09	0.11	0.09	0.33	0.29	0.09	0.22	0.09	0.05	0.21	0.14
s, saturation flow rate [veh/h]	3500	3800	1900	3500	1900	1900	3500	3800	1900	3500	3800	1900
c, Capacity [veh/h]	184	1149	574	372	677	677	305	1486	743	214	1387	693
d1, Uniform Delay [s]	54.19	30.86	31.51	50.26	35.54	33.74	52.50	27.27	23.56	53.52	29.33	27.04
k, delay calibration	0.11	0.11	0.11	0.11	0.31	0.25	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	14.10	0.15	0.40	4.22	14.16	5.69	38.56	1.51	0.77	9.86	1.73	1.64
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.90	0.31	0.37	0.81	0.92	0.82	1.05	0.56	0.24	0.86	0.57	0.39
d, Delay for Lane Group [s/veh]	68.29	31.01	31.91	54.49	49.70	39.43	91.06	28.77	24.34	63.38	31.06	28.68
Lane Group LOS	E	C	C	D	D	D	F	C	C	E	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.73	3.80	4.69	4.45	19.13	15.00	6.03	9.07	3.45	2.94	9.08	5.79
50th-Percentile Queue Length [ft/ln]	68.30	94.95	117.29	111.14	478.16	375.01	150.83	226.75	86.36	73.54	227.03	144.86
95th-Percentile Queue Length [veh/ln]	4.92	6.84	8.24	7.90	26.30	21.35	10.24	14.01	6.22	5.30	14.02	9.74
95th-Percentile Queue Length [ft/ln]	122.94	170.92	206.10	197.59	657.47	533.81	255.95	350.22	155.45	132.38	350.58	243.55

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	68.29	31.01	31.91	54.49	49.29	39.43	91.06	28.77	24.34	63.38	31.06	28.68
Movement LOS	E	C	C	D	D	D	F	C	C	E	C	C
d_A, Approach Delay [s/veh]	39.70			46.81			43.23			35.33		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	41.74											
Intersection LOS	D											
Intersection V/C	0.786											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	47.04	47.04	47.04	47.04
l_p,int, Pedestrian LOS Score for Intersection	2.849	2.859	2.998	2.966
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	609	835	661	609
d_b, Bicycle Delay [s]	27.84	19.53	25.79	27.84
l_b,int, Bicycle LOS Score for Intersection	2.162	2.783	2.655	2.591
Bicycle LOS	B	C	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 6: S Associated Road at Birch Street

Control Type:	Signalized	Delay (sec / veh):	21.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.598

Intersection Setup

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S Associated Road			S Associated Road			Birch Street			Birch Street		
Base Volume Input [veh/h]	358	21	179	13	23	17	11	867	371	161	860	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	358	21	179	13	23	17	11	867	371	161	860	15
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	90	5	45	3	6	4	3	217	93	40	215	4
Total Analysis Volume [veh/h]	358	21	179	13	23	17	11	867	371	161	860	15
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	8	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups			1,8									
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	6	0	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	30	0	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	3.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	24	61	61	0	37	0	10	39	0	10	39	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	26	26	0	26	0	0	27	0	0	26	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No		No		No	No		No	No	
Maximum Recall	No	No	No		No		No	No		No	No	
Pedestrian Recall	No	No	No		No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	C	L	C	C
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	22	32	5	5	2	70	70	6	74	74
g / C, Green / Cycle	0.12	0.20	0.30	0.04	0.04	0.02	0.63	0.63	0.05	0.67	0.67
(v / s)_i Volume / Saturation Flow Rate	0.10	0.01	0.09	0.01	0.02	0.01	0.34	0.31	0.05	0.23	0.23
s, saturation flow rate [veh/h]	3500	1900	1900	1800	1900	1800	1900	1900	3500	1900	1900
c, Capacity [veh/h]	434	389	562	100	84	29	1200	1200	192	1273	1273
d1, Uniform Delay [s]	47.03	35.20	30.11	50.63	51.35	53.59	11.36	10.84	51.51	7.78	7.77
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.00	0.06	0.32	0.58	4.13	7.97	1.75	1.44	9.23	0.74	0.73
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.82	0.05	0.32	0.13	0.48	0.38	0.54	0.49	0.84	0.34	0.34
d, Delay for Lane Group [s/veh]	51.03	35.25	30.43	51.21	55.48	61.56	13.11	12.28	60.75	8.52	8.50
Lane Group LOS	D	D	C	D	E	E	B	B	E	A	A
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.01	0.46	3.74	0.36	1.17	0.37	8.83	7.62	2.44	4.36	4.32
50th-Percentile Queue Length [ft/ln]	125.13	11.53	93.40	9.03	29.31	9.13	220.81	190.46	61.03	108.93	108.07
95th-Percentile Queue Length [veh/ln]	8.67	0.83	6.73	0.65	2.11	0.66	13.71	12.14	4.39	7.78	7.73
95th-Percentile Queue Length [ft/ln]	216.85	20.76	168.13	16.25	52.76	16.43	342.66	303.62	109.85	194.51	193.32

Movement, Approach, & Intersection Results

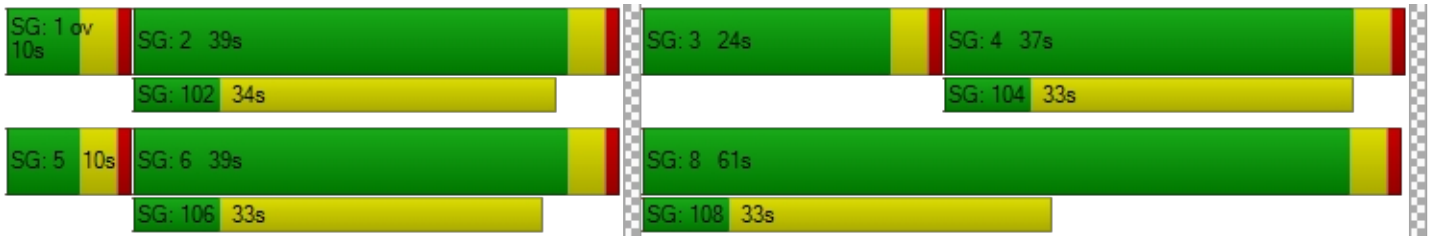
d_M, Delay for Movement [s/veh]	51.03	35.25	30.43	51.21	55.48	55.48	61.56	12.90	12.28	60.75	8.51	8.50
Movement LOS	D	D	C	D	E	E	E	B	B	E	A	A
d_A, Approach Delay [s/veh]	43.83			54.43			13.14			16.63		
Approach LOS	D			D			B			B		
d_I, Intersection Delay [s/veh]	21.06											
Intersection LOS	C											
Intersection V/C	0.598											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	44.56	44.56	44.56	44.56
l_p,int, Pedestrian LOS Score for Intersection	2.643	1.982	2.794	2.821
Crosswalk LOS	B	A	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1036	600	636	636
d_b, Bicycle Delay [s]	12.78	26.96	25.58	25.58
l_b,int, Bicycle LOS Score for Intersection	2.480	1.647	2.590	2.414
Bicycle LOS	B	A	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 7: Randolph Avenue at Madison Way

Control Type:	Signalized	Delay (sec / veh):	16.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.271

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Madison Way			Madison Way		
Base Volume Input [veh/h]	23	410	120	76	288	25	40	12	63	87	4	60
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	410	120	76	288	25	40	12	63	87	4	60
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	103	30	19	72	6	10	3	16	22	1	15
Total Analysis Volume [veh/h]	23	410	120	76	288	25	40	12	63	87	4	60
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	6	6	0	6	6	0	0	6	0	0	6	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	26	0	10	26	0	0	54	0	0	54	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	15	0	0	12	0	0	19	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	66	66	5	69	69	6	6	6	6
g / C, Green / Cycle	0.03	0.74	0.74	0.06	0.77	0.77	0.07	0.07	0.07	0.07
(v / s)_i Volume / Saturation Flow Rate	0.01	0.14	0.13	0.04	0.08	0.08	0.02	0.04	0.05	0.03
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1900	1800	1900	1800	1900
c, Capacity [veh/h]	55	1401	1401	104	1453	1453	118	136	107	136
d1, Uniform Delay [s]	42.88	3.63	3.59	41.73	2.72	2.72	39.68	40.39	40.77	40.15
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.05	0.31	0.29	9.39	0.15	0.15	1.69	3.44	13.36	2.50
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.42	0.20	0.18	0.73	0.11	0.11	0.34	0.55	0.81	0.47
d, Delay for Lane Group [s/veh]	47.93	3.94	3.88	51.12	2.87	2.86	41.37	43.83	54.13	42.65
Lane Group LOS	D	A	A	D	A	A	D	D	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.57	1.29	1.20	1.91	0.57	0.56	0.89	1.72	2.26	1.44
50th-Percentile Queue Length [ft/ln]	14.37	32.31	29.94	47.83	14.34	14.06	22.19	42.96	56.45	36.05
95th-Percentile Queue Length [veh/ln]	1.03	2.33	2.16	3.44	1.03	1.01	1.60	3.09	4.06	2.60
95th-Percentile Queue Length [ft/ln]	25.87	58.15	53.90	86.10	25.81	25.31	39.93	77.32	101.61	64.88

Movement, Approach, & Intersection Results

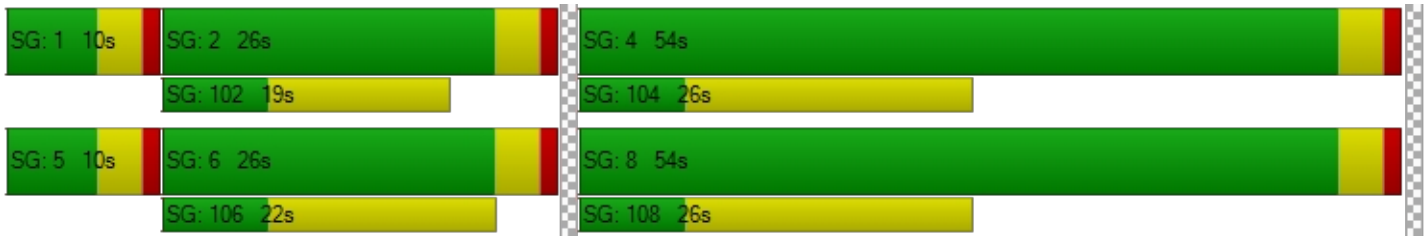
d_M, Delay for Movement [s/veh]	47.93	3.92	3.88	51.12	2.87	2.86	41.37	43.83	43.83	54.13	42.65	42.65
Movement LOS	D	A	A	D	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	5.74			12.30			42.97			49.27		
Approach LOS	A			B			D			D		
d_I, Intersection Delay [s/veh]	16.84											
Intersection LOS	B											
Intersection V/C	0.271											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	34.68	34.68
l_p,int, Pedestrian LOS Score for Intersection	2.616	2.532	1.994	2.056
Crosswalk LOS	B	B	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	489	489	1111	1111
d_b, Bicycle Delay [s]	25.70	25.70	8.90	8.90
l_b,int, Bicycle LOS Score for Intersection	2.016	1.881	1.749	1.809
Bicycle LOS	B	A	A	A

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 8: Randolph Avenue at Brea Mall

Control Type:	Signalized	Delay (sec / veh):	24.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.529

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Randolph Avenue			Randolph Avenue			Brea Mall			Brea Mall		
Base Volume Input [veh/h]	26	464	501	54	335	23	25	16	28	494	6	100
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	464	501	54	335	23	25	16	28	494	6	100
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	116	125	14	84	6	6	4	7	124	2	25
Total Analysis Volume [veh/h]	26	464	501	54	335	23	25	16	28	494	6	100
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	6	6	0	6	6	0	0	6	0	0	6	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	28	0	11	29	0	0	30	0	0	36	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	17	0	0	18	0	0	19	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	R	L	C
C, Cycle Length [s]	105	105	105	105	105	105	105	105	105	105
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	67	58	58	67	60	60	5	5	21	21
g / C, Green / Cycle	0.64	0.56	0.56	0.64	0.57	0.57	0.05	0.05	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.01	0.24	0.26	0.03	0.09	0.09	0.02	0.01	0.17	0.15
s, saturation flow rate [veh/h]	1800	1900	1900	1800	1900	1900	1800	1900	1800	1900
c, Capacity [veh/h]	1165	1055	1055	955	1084	1084	90	95	353	373
d1, Uniform Delay [s]	6.93	13.73	14.10	7.04	10.71	10.69	48.51	48.12	40.86	40.15
k, delay calibration	0.11	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.13	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.01	1.33	1.53	0.11	0.33	0.33	3.56	1.70	7.38	3.75
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.02	0.44	0.47	0.06	0.17	0.16	0.46	0.29	0.86	0.79
d, Delay for Lane Group [s/veh]	6.94	15.06	15.63	7.15	11.04	11.02	52.08	49.82	48.25	43.90
Lane Group LOS	A	B	B	A	B	B	D	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.20	6.57	7.30	0.45	2.02	1.99	1.13	0.75	8.29	7.56
50th-Percentile Queue Length [ft/ln]	5.09	164.24	182.43	11.36	50.47	49.63	28.28	18.77	207.37	188.88
95th-Percentile Queue Length [veh/ln]	0.37	10.77	11.73	0.82	3.63	3.57	2.04	1.35	13.02	12.06
95th-Percentile Queue Length [ft/ln]	9.16	269.32	293.19	20.45	90.84	89.33	50.90	33.79	325.45	301.57

Movement, Approach, & Intersection Results

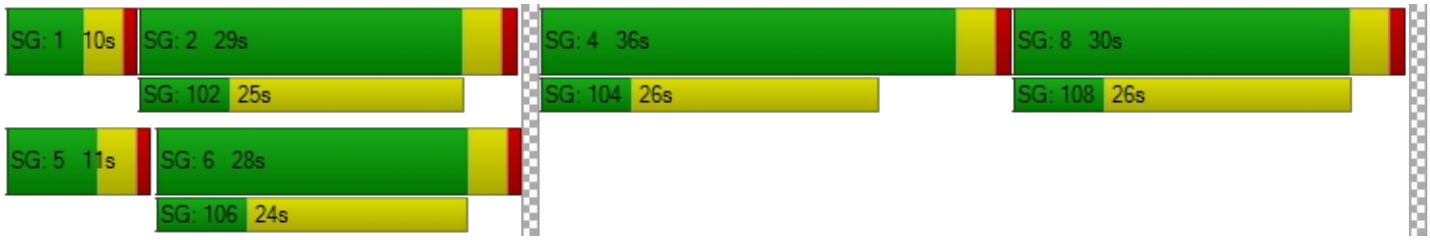
d_M, Delay for Movement [s/veh]	6.94	15.06	15.63	7.15	11.03	11.02	52.08	52.08	49.82	46.58	43.90	43.90
Movement LOS	A	B	B	A	B	B	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	15.13			10.52			51.16			46.11		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	24.39											
Intersection LOS	C											
Intersection V/C	0.529											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	42.09	42.09	42.09	42.09
l_p,int, Pedestrian LOS Score for Intersection	2.667	2.502	2.010	2.372
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	457	476	495	609
d_b, Bicycle Delay [s]	31.26	30.49	29.73	25.39
l_b,int, Bicycle LOS Score for Intersection	2.377	1.900	1.673	2.550
Bicycle LOS	B	A	A	B

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 9: Brea Mall South at State College Boulevard

Control Type:	Signalized	Delay (sec / veh):	32.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.833

Intersection Setup

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Brea Mall South			Brea Mall South			State College Boulevard			State College Boulevard		
Base Volume Input [veh/h]	184	34	99	88	29	636	743	506	41	93	673	47
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	184	34	99	88	29	636	743	506	41	93	673	47
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	46	9	25	22	7	159	186	127	10	23	168	12
Total Analysis Volume [veh/h]	184	34	99	88	29	636	743	506	41	93	673	47
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	4	5	2	0	1	6	0
Auxiliary Signal Groups						4,5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	6	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	30	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	37	0	0	14	14	37	31	0	38	32	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	26	0	0	0	0	0	20	0	0	21	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No	No	No	No		No	No	
Maximum Recall		No			No	No	No	No		No	No	
Pedestrian Recall		No			No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	C	C	R	L	C	C	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	11	11	10	10	61	31	75	75	8	51	51
g / C, Green / Cycle	0.10	0.10	0.10	0.08	0.08	0.51	0.26	0.62	0.62	0.07	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.04	0.08	0.05	0.05	0.02	0.33	0.21	0.15	0.14	0.05	0.19	0.19
s, saturation flow rate [veh/h]	1800	1800	1900	1800	1900	1900	3500	1900	1900	1800	1900	1900
c, Capacity [veh/h]	204	224	181	151	159	965	917	1180	1180	120	808	808
d1, Uniform Delay [s]	51.45	53.21	51.85	52.97	51.16	21.86	41.50	10.09	10.05	55.16	24.51	24.38
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.24	2.72	2.57	3.52	0.54	3.53	1.77	0.47	0.45	10.24	1.81	1.74
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.39	0.61	0.55	0.58	0.18	0.66	0.81	0.23	0.23	0.78	0.45	0.44
d, Delay for Lane Group [s/veh]	52.68	55.93	54.41	56.49	51.70	25.38	43.27	10.56	10.50	65.40	26.32	26.12
Lane Group LOS	D	E	D	E	D	C	D	B	B	E	C	C
Critical Lane Group	No	Yes	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.37	4.23	2.98	2.71	0.84	13.89	10.48	3.31	3.22	3.11	7.73	7.51
50th-Percentile Queue Length [ft/ln]	59.22	105.69	74.42	67.70	20.97	347.31	262.02	82.76	80.50	77.78	193.14	187.75
95th-Percentile Queue Length [veh/ln]	4.26	7.60	5.36	4.87	1.51	20.00	15.79	5.96	5.80	5.60	12.28	12.00
95th-Percentile Queue Length [ft/ln]	106.59	189.99	133.95	121.86	37.75	500.12	394.76	148.97	144.89	140.00	307.10	300.10

Movement, Approach, & Intersection Results

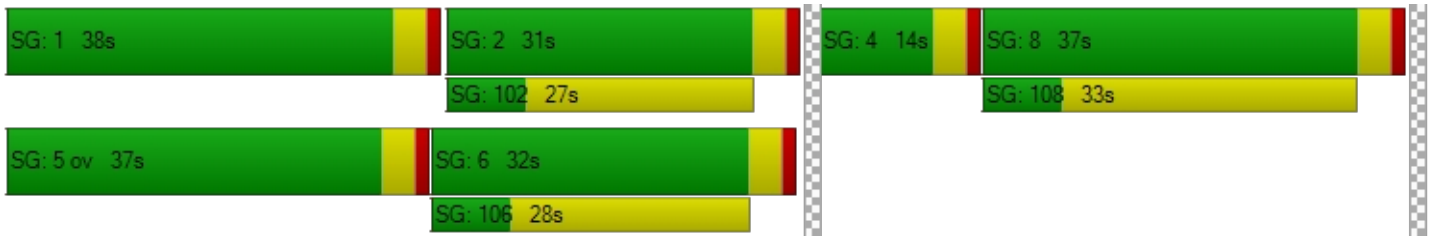
d_M, Delay for Movement [s/veh]	54.44	55.93	54.41	56.49	51.70	25.38	43.27	10.53	10.50	65.40	26.23	26.12
Movement LOS	D	E	D	E	D	C	D	B	B	E	C	C
d_A, Approach Delay [s/veh]	54.63			30.03			29.39			30.70		
Approach LOS	D			C			C			C		
d_I, Intersection Delay [s/veh]	32.40											
Intersection LOS	C											
Intersection V/C	0.833											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.52	49.52	0.00	49.52
l_p,int, Pedestrian LOS Score for Intersection	2.407	2.621	0.000	2.607
Crosswalk LOS	B	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	550	167	450	467
d_b, Bicycle Delay [s]	31.55	50.43	36.05	35.28
l_b,int, Bicycle LOS Score for Intersection	2.083	2.181	2.624	2.230
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 10: Harbor Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	53.4
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.896

Intersection Setup

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Harbor Boulevard			Harbor Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	719	989	282	248	896	315	371	1294	391	368	1407	236
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	719	989	282	248	896	315	371	1294	391	368	1407	236
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	180	247	71	62	224	79	93	324	98	92	352	59
Total Analysis Volume [veh/h]	719	989	282	248	896	315	371	1294	391	368	1407	236
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	26	52	0	11	37	0	17	42	0	15	40	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	31	0	0	28	0	0	31	0	0	29	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	22	39	39	7	24	24	13	47	47	11	45	45
g / C, Green / Cycle	0.18	0.33	0.33	0.06	0.20	0.20	0.11	0.39	0.39	0.09	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.21	0.17	0.15	0.07	0.16	0.17	0.11	0.30	0.29	0.11	0.25	0.12
s, saturation flow rate [veh/h]	3500	5700	1900	3500	5700	1900	3500	3800	1900	3500	5700	1900
c, Capacity [veh/h]	643	1863	621	209	1157	386	383	1472	736	325	2114	705
d1, Uniform Delay [s]	49.03	32.93	31.96	56.47	45.28	45.74	53.30	32.23	31.55	54.49	31.56	27.14
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.16	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	58.53	0.24	0.52	94.03	1.14	6.34	15.30	4.07	6.50	68.70	1.68	1.28
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.12	0.53	0.45	1.19	0.77	0.82	0.97	0.78	0.74	1.13	0.67	0.33
d, Delay for Lane Group [s/veh]	107.56	33.17	32.48	150.51	46.42	52.08	68.59	36.30	38.05	123.19	33.24	28.42
Lane Group LOS	F	C	C	F	D	D	E	D	D	F	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	14.81	7.84	6.56	5.90	8.52	9.63	6.38	15.14	14.63	8.00	11.58	5.12
50th-Percentile Queue Length [ft/ln]	370.29	196.00	164.11	147.56	213.05	240.73	159.54	378.56	365.83	200.07	289.56	128.02
95th-Percentile Queue Length [veh/ln]	22.33	12.43	10.77	10.37	13.31	14.72	10.52	21.52	20.91	13.22	17.16	8.83
95th-Percentile Queue Length [ft/ln]	558.25	310.79	269.16	259.31	332.74	367.95	263.11	538.10	522.67	330.43	429.09	220.80

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	107.56	33.17	32.48	150.51	46.42	52.08	68.59	36.51	38.05	123.19	33.24	28.42
Movement LOS	F	C	C	F	D	D	E	D	D	F	C	C
d_A, Approach Delay [s/veh]	59.95			65.33			42.59			49.13		
Approach LOS	E			E			D			D		
d_I, Intersection Delay [s/veh]	53.35											
Intersection LOS	D											
Intersection V/C	0.896											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.54	49.54	49.54	49.54
l_p,int, Pedestrian LOS Score for Intersection	3.258	3.194	3.287	3.278
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	800	550	633	600
d_b, Bicycle Delay [s]	21.63	31.57	28.04	29.43
l_b,int, Bicycle LOS Score for Intersection	2.654	2.362	2.690	2.666
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 11: Puente Street at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	13.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.481

Intersection Setup

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Puente Street			Puente Street			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	28	33	109	186	46	134	86	1433	39	88	1484	248
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	28	33	109	186	46	134	86	1433	39	88	1484	248
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	8	27	47	12	34	22	358	10	22	371	62
Total Analysis Volume [veh/h]	28	33	109	186	46	134	86	1433	39	88	1484	248
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	38	0	0	38	0	18	32	0	20	34	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	23	0	0	17	0	0	23	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	12	12	12	12	12	6	60	60	6	61	61
g / C, Green / Cycle	0.13	0.13	0.13	0.13	0.13	0.13	0.06	0.67	0.67	0.06	0.67	0.67
(v / s)_i Volume / Saturation Flow Rate	0.02	0.02	0.06	0.10	0.01	0.07	0.05	0.26	0.26	0.05	0.26	0.13
s, saturation flow rate [veh/h]	1800	1900	1900	1800	3800	1900	1800	3800	1900	1800	5700	1900
c, Capacity [veh/h]	265	249	249	256	498	249	115	2547	1274	118	3829	1276
d1, Uniform Delay [s]	34.54	34.61	36.08	37.93	34.42	36.59	41.46	6.57	6.66	41.37	6.56	5.58
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.17	0.24	1.21	3.89	0.08	1.80	9.30	0.43	0.92	9.09	0.30	0.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.11	0.13	0.44	0.73	0.09	0.54	0.75	0.38	0.39	0.75	0.39	0.19
d, Delay for Lane Group [s/veh]	34.72	34.85	37.28	41.81	34.50	38.39	50.75	7.01	7.57	50.47	6.86	5.92
Lane Group LOS	C	C	D	D	C	D	D	A	A	D	A	A
Critical Lane Group	No	No	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.55	0.65	2.26	4.19	0.44	2.84	2.15	3.62	3.96	2.20	3.64	1.63
50th-Percentile Queue Length [ft/ln]	13.73	16.25	56.62	104.74	11.12	71.10	53.83	90.52	99.07	54.89	91.07	40.73
95th-Percentile Queue Length [veh/ln]	0.99	1.17	4.08	7.54	0.80	5.12	3.88	6.52	7.13	3.95	6.56	2.93
95th-Percentile Queue Length [ft/ln]	24.72	29.25	101.91	188.53	20.01	127.98	96.89	162.93	178.33	98.80	163.93	73.31

Movement, Approach, & Intersection Results

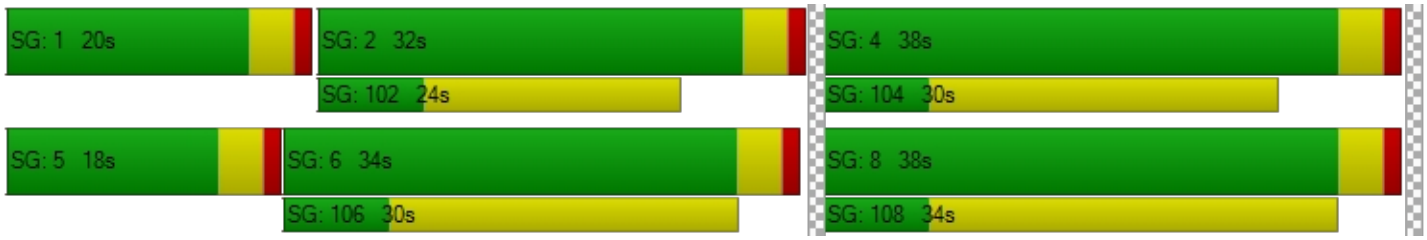
d_M, Delay for Movement [s/veh]	34.72	34.85	37.28	41.81	34.50	38.39	50.75	7.19	7.57	50.47	6.86	5.92
Movement LOS	C	C	D	D	C	D	D	A	A	D	A	A
d_A, Approach Delay [s/veh]	36.39			39.64			9.60			8.84		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	13.22											
Intersection LOS	B											
Intersection V/C	0.481											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.70	34.70	34.70	34.70
l_p,int, Pedestrian LOS Score for Intersection	2.366	2.442	3.080	3.422
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	755	755	622	666
d_b, Bicycle Delay [s]	17.44	17.44	21.38	20.02
l_b,int, Bicycle LOS Score for Intersection	1.840	1.862	2.417	2.561
Bicycle LOS	A	A	B	B

Sequence

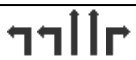
Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: Brea Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	45.0
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.874

Intersection Setup

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Brea Boulevard			Brea Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	451	669	307	490	984	274	296	1462	302	396	1512	435
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	451	669	307	490	984	274	296	1462	302	396	1512	435
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	113	167	77	123	246	69	74	366	76	99	378	109
Total Analysis Volume [veh/h]	451	669	307	490	984	274	296	1462	302	396	1512	435
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	20	41	0	21	42	0	15	41	0	17	43	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	30	0	0	28	0	0	30	0	0	30	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	16	33	33	17	34	34	11	41	41	13	43	43
g / C, Green / Cycle	0.13	0.28	0.28	0.14	0.29	0.29	0.09	0.34	0.34	0.11	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.13	0.12	0.16	0.14	0.26	0.14	0.08	0.26	0.16	0.11	0.27	0.23
s, saturation flow rate [veh/h]	3500	5700	1900	3500	3800	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	469	1574	525	498	1081	540	325	1932	644	383	2026	675
d1, Uniform Delay [s]	51.69	35.65	37.53	51.37	41.50	35.94	54.00	35.30	31.21	53.50	33.96	32.36
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	12.07	0.18	1.04	15.22	3.38	0.74	9.86	2.82	2.44	30.99	2.56	4.69
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.96	0.43	0.59	0.98	0.91	0.51	0.91	0.76	0.47	1.03	0.75	0.64
d, Delay for Lane Group [s/veh]	63.77	35.84	38.58	66.59	44.88	36.68	63.86	38.13	33.65	84.48	36.51	37.04
Lane Group LOS	E	D	D	E	D	D	E	D	C	F	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	7.52	5.39	7.93	8.38	14.42	6.82	4.87	13.06	7.32	7.41	13.24	11.38
50th-Percentile Queue Length [ft/ln]	187.97	134.79	198.18	209.58	360.53	170.52	121.83	326.56	182.90	185.29	331.03	284.38
95th-Percentile Queue Length [veh/ln]	12.02	9.20	12.54	13.13	20.65	11.10	8.49	18.99	11.75	12.04	19.21	16.91
95th-Percentile Queue Length [ft/ln]	300.40	229.99	313.62	328.30	516.22	277.60	212.34	474.75	293.80	300.96	480.23	422.66

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	63.77	35.84	38.58	66.59	44.88	36.68	63.86	38.13	33.65	84.48	36.51	37.04
Movement LOS	E	D	D	E	D	D	E	D	C	F	D	D
d_A, Approach Delay [s/veh]	45.25			49.68			41.17			44.72		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	45.00											
Intersection LOS	D											
Intersection V/C	0.874											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.54	49.54	49.54	49.54
l_p,int, Pedestrian LOS Score for Intersection	3.118	3.123	3.329	3.362
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	616	633	616	650
d_b, Bicycle Delay [s]	28.73	28.04	28.73	27.37
l_b,int, Bicycle LOS Score for Intersection	2.344	3.002	2.693	2.848
Bicycle LOS	B	C	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 13: Randolph Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	47.2
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.927

Intersection Setup

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Randolph Avenue			Randolph Avenue			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	107	49	209	467	90	367	360	1684	68	151	1996	520
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	107	49	209	467	90	367	360	1684	68	151	1996	520
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	12	52	117	23	92	90	421	17	38	499	130
Total Analysis Volume [veh/h]	107	49	209	467	90	367	360	1684	68	151	1996	520
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	17	0	0	40	0	17	48	0	15	46	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	29	0	0	28	0	0	29	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	15	15	32	32	13	46	46	11	44	44
g / C, Green / Cycle	0.13	0.13	0.13	0.26	0.26	0.11	0.38	0.38	0.09	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.06	0.03	0.11	0.13	0.24	0.10	0.30	0.31	0.08	0.35	0.27
s, saturation flow rate [veh/h]	1800	1800	1900	3500	1900	3500	3800	1900	1800	5700	1900
c, Capacity [veh/h]	229	229	241	925	502	381	1456	728	166	2090	697
d1, Uniform Delay [s]	48.64	47.02	51.40	37.51	42.80	53.14	32.81	33.30	54.00	37.06	33.15
k, delay calibration	0.11	0.11	0.11	0.11	0.31	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.49	0.46	9.03	0.43	16.22	11.87	4.52	10.01	16.70	11.62	7.16
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.47	0.21	0.87	0.51	0.91	0.95	0.79	0.82	0.91	0.96	0.75
d, Delay for Lane Group [s/veh]	50.12	47.49	60.43	37.94	59.01	65.02	37.32	43.31	70.69	48.68	40.31
Lane Group LOS	D	D	E	D	E	E	D	D	E	D	D
Critical Lane Group	No	No	Yes	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.08	1.35	6.76	5.89	15.29	6.01	15.57	17.40	5.28	20.90	14.43
50th-Percentile Queue Length [ft/ln]	76.95	33.76	169.11	147.25	382.28	150.32	389.15	435.00	132.12	522.47	360.65
95th-Percentile Queue Length [veh/ln]	5.54	2.43	11.03	9.87	21.70	10.03	22.04	24.24	9.06	28.40	20.65
95th-Percentile Queue Length [ft/ln]	138.51	60.77	275.75	246.75	542.60	250.85	550.92	606.02	226.38	709.90	516.37

Movement, Approach, & Intersection Results

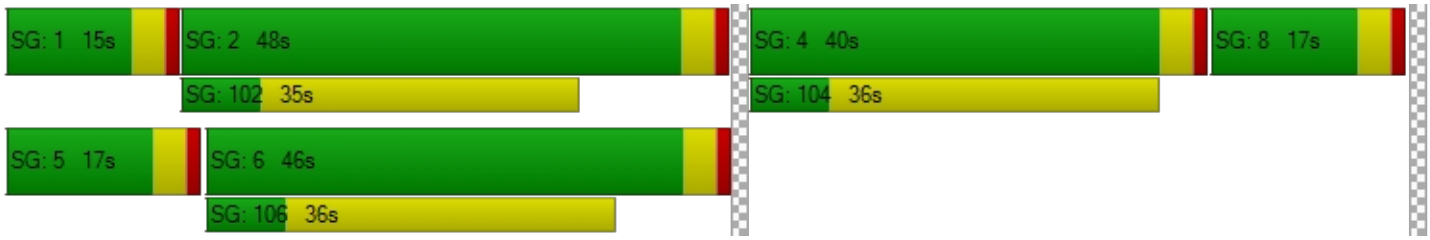
d_M, Delay for Movement [s/veh]	50.12	47.49	60.43	37.94	59.01	59.01	65.02	39.20	43.31	70.69	48.68	40.31
Movement LOS	D	D	E	D	E	E	E	D	D	E	D	D
d_A, Approach Delay [s/veh]	55.67			48.36			43.74			48.29		
Approach LOS	E			D			D			D		
d_I, Intersection Delay [s/veh]	47.16											
Intersection LOS	D											
Intersection V/C	0.927											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.52	49.52	49.52	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.309	2.675	3.298	0.000
Crosswalk LOS	B	B	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	217	600	733	700
d_b, Bicycle Delay [s]	47.72	29.41	24.08	25.36
l_b,int, Bicycle LOS Score for Intersection	1.861	3.084	2.721	3.026
Bicycle LOS	A	C	B	C

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 14: State College Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	148.1
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.408

Intersection Setup

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	331	665	780	677	464	195	146	1791	244	699	2208	1173
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	331	665	780	677	464	195	146	1791	244	699	2208	1173
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	83	166	195	169	116	49	37	448	61	175	552	293
Total Analysis Volume [veh/h]	331	665	780	677	464	195	146	1791	244	699	2208	1173
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	29	41	0	27	39	0	10	34	0	18	42	42
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	30	0	0	28	0	0	23	0	0	23	23
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	14	37	37	23	46	46	6	30	30	14	38	65
g / C, Green / Cycle	0.12	0.31	0.31	0.19	0.38	0.38	0.05	0.25	0.25	0.12	0.32	0.54
(v / s)_i Volume / Saturation Flow Rate	0.09	0.18	0.41	0.34	0.18	0.17	0.04	0.27	0.27	0.20	0.39	0.62
s, saturation flow rate [veh/h]	3500	3800	1900	2000	1900	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	405	1166	583	383	728	728	176	1431	477	409	1811	1031
d1, Uniform Delay [s]	51.85	34.94	41.59	48.51	27.90	27.38	56.48	44.94	44.94	53.00	40.95	27.45
k, delay calibration	0.11	0.11	0.50	0.21	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.12	0.44	163.23	349.04	0.48	0.41	9.46	42.01	64.52	321.09	104.02	73.99
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.82	0.57	1.34	1.77	0.47	0.43	0.83	1.06	1.08	1.71	1.22	1.14
d, Delay for Lane Group [s/veh]	55.96	35.38	204.83	397.55	28.38	27.78	65.94	86.96	109.47	374.09	144.97	101.44
Lane Group LOS	E	D	F	F	C	C	E	F	F	F	F	F
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.09	8.21	43.44	24.30	7.52	6.74	2.42	19.65	22.63	24.40	35.02	49.10
50th-Percentile Queue Length [ft/ln]	127.35	205.31	1086.03	607.43	188.06	168.56	60.60	491.21	565.79	609.96	875.51	1227.49
95th-Percentile Queue Length [veh/ln]	8.80	12.91	64.01	39.84	12.02	11.00	4.36	27.89	31.87	38.65	50.48	67.11
95th-Percentile Queue Length [ft/ln]	219.89	322.81	1600.31	996.01	300.51	275.02	109.09	697.31	796.73	966.17	1262.03	1677.80

Movement, Approach, & Intersection Results

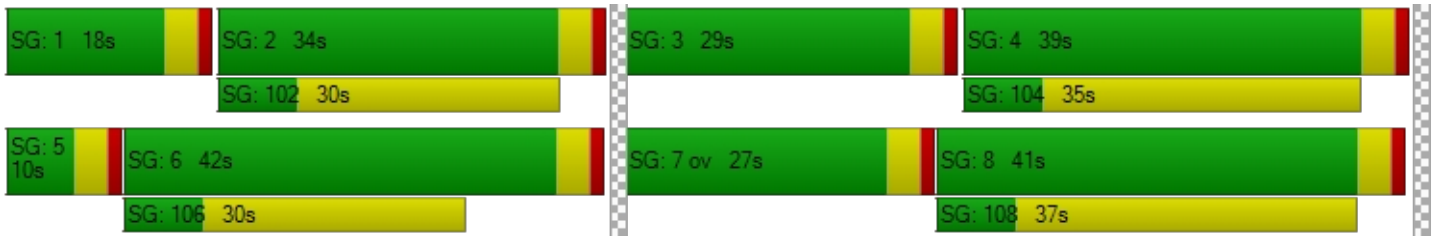
d_M, Delay for Movement [s/veh]	55.96	35.38	204.83	397.55	28.22	27.78	65.94	90.37	109.47	374.09	144.97	101.44
Movement LOS	E	D	F	F	C	C	E	F	F	F	F	F
d_A, Approach Delay [s/veh]	113.64			215.31			90.87			171.71		
Approach LOS	F			F			F			F		
d_I, Intersection Delay [s/veh]	148.11											
Intersection LOS	F											
Intersection V/C	1.408											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.51	49.51	49.51	49.51
l_p,int, Pedestrian LOS Score for Intersection	3.051	3.006	3.395	3.695
Crosswalk LOS	C	C	C	D
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	617	583	500	633
d_b, Bicycle Delay [s]	28.71	30.11	33.76	28.02
l_b,int, Bicycle LOS Score for Intersection	3.025	2.662	2.459	3.804
Bicycle LOS	C	B	B	D

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 15: SR-57 SB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	20.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.845

Intersection Setup

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	1	0	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present				No			No			No		
Crosswalk	No			Yes			No			No		

Volumes

Name				SR-57 SB Ramps			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	0	0	0	581	0	836	0	2386	1272	0	2891	367
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	581	0	836	0	2386	1272	0	2891	367
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	145	0	209	0	597	318	0	723	92
Total Analysis Volume [veh/h]	0	0	0	581	0	836	0	2386	1272	0	2891	367
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Split	Permiss	Split	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna
Signal Group	0	0	0	7	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	6	0	0	0	6	0	0	6	0
Maximum Green [s]	0	0	0	30	0	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	56	0	0	0	44	0	0	44	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	15	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk				No				No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				No				No			No	
Maximum Recall				No				No			No	
Pedestrian Recall				No				No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	R	C	C
C, Cycle Length [s]		100	100	100	100	100
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		32	32	32	60	60
g / C, Green / Cycle		0.32	0.32	0.32	0.60	0.60
(v / s)_i Volume / Saturation Flow Rate		0.27	0.27	0.25	0.42	0.51
s, saturation flow rate [veh/h]		1750	1750	1900	5700	5700
c, Capacity [veh/h]		553	553	601	3442	3442
d1, Uniform Delay [s]		32.00	32.00	31.09	13.48	15.90
k, delay calibration		0.11	0.11	0.11	0.50	0.50
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		3.88	3.88	2.33	1.17	2.65
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		1.00	1.00	1.00	1.00	1.00
PF, progression factor		1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		0.85	0.85	0.79	0.69	0.84
d, Delay for Lane Group [s/veh]		35.88	35.88	33.42	14.65	18.55
Lane Group LOS		D	D	C	B	B
Critical Lane Group		Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]		11.01	11.01	10.50	11.49	16.73
50th-Percentile Queue Length [ft/ln]		275.17	275.17	262.59	287.13	418.19
95th-Percentile Queue Length [veh/ln]		16.45	16.45	15.82	17.04	23.44
95th-Percentile Queue Length [ft/ln]		411.19	411.19	395.47	426.08	585.88

Movement, Approach, & Intersection Results

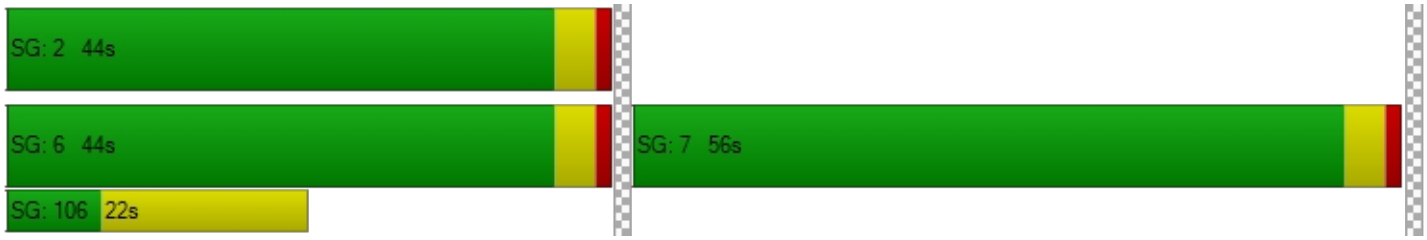
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	35.88	0.00	34.49	0.00	14.65	0.00	0.00	18.55	0.00
Movement LOS				D		C		B			B	
d_A, Approach Delay [s/veh]	0.00			35.06			14.65			18.55		
Approach LOS	A			D			B			B		
d_I, Intersection Delay [s/veh]	20.65											
Intersection LOS	C											
Intersection V/C	0.845											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	39.57	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	2.481	0.000	0.000
Crosswalk LOS	F	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	1041	801	801
d_b, Bicycle Delay [s]	49.97	11.50	17.97	17.97
l_b,int, Bicycle LOS Score for Intersection	4.132	3.898	2.872	3.150
Bicycle LOS	D	D	C	C

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 16: SR-57 NB Ramps at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	42.6
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.952

Intersection Setup

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			No		

Volumes

Name	SR-57 NB Ramps			Shopping Center			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	1581	117	638	0	0	372	389	2123	702	0	2238	60
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1581	117	638	0	0	372	389	2123	702	0	2238	60
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	395	29	160	0	0	93	97	531	176	0	560	15
Total Analysis Volume [veh/h]	1581	117	638	0	0	372	389	2123	702	0	2238	60
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Permiss	Overlap	Protecte	Permiss	Unsigna	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	0	5	5	2	0	0	6	0
Auxiliary Signal Groups						5						
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	6	0	0	0	6	6	6	0	0	6	0
Maximum Green [s]	0	30	0	0	0	30	30	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	1.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	47	0	0	0	31	31	73	0	0	42	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	3.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	22	0	0	19	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No				No		No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No				No	No	No			No	
Maximum Recall		No				No	No	No			No	
Pedestrian Recall		No				No	No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	R	L	C	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	43	43	43	27	27	69	38	38
g / C, Green / Cycle	0.36	0.36	0.36	0.23	0.23	0.58	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.33	0.34	0.31	0.10	0.22	0.37	0.30	0.30
s, saturation flow rate [veh/h]	3500	1750	1900	3800	1800	5700	5700	1900
c, Capacity [veh/h]	1244	622	675	855	405	3293	1820	607
d1, Uniform Delay [s]	37.11	37.66	36.20	39.92	45.94	17.03	39.82	39.82
k, delay calibration	0.11	0.42	0.37	0.11	0.35	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.49	23.44	11.58	0.35	28.83	0.99	11.79	25.54
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.92	0.95	0.88	0.43	0.96	0.64	0.95	0.95
d, Delay for Lane Group [s/veh]	40.60	61.10	47.78	40.27	74.77	18.02	51.61	65.36
Lane Group LOS	D	E	D	D	E	B	D	E
Critical Lane Group	No	Yes	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	16.54	20.70	18.18	4.77	14.63	12.92	18.29	20.61
50th-Percentile Queue Length [ft/ln]	413.43	517.61	454.50	119.29	365.72	323.00	457.33	515.28
95th-Percentile Queue Length [veh/ln]	23.21	28.17	25.17	8.35	20.90	18.81	25.31	28.06
95th-Percentile Queue Length [ft/ln]	580.16	704.17	629.31	208.85	522.53	470.37	632.69	701.41

Movement, Approach, & Intersection Results

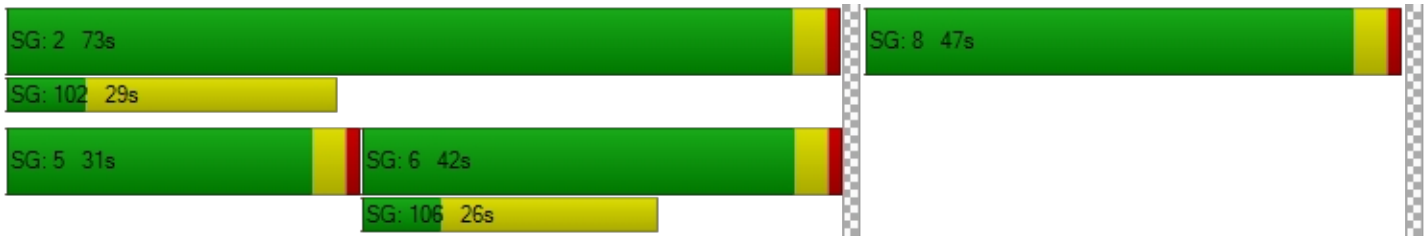
d_M, Delay for Movement [s/veh]	46.07	61.10	48.91	0.00	0.00	40.27	74.77	18.02	0.00	0.00	54.77	65.36
Movement LOS	D	E	D			D	E	B			D	E
d_A, Approach Delay [s/veh]	47.62			40.27			26.81			55.05		
Approach LOS	D			D			C			E		
d_I, Intersection Delay [s/veh]	42.57											
Intersection LOS	D											
Intersection V/C	0.952											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.49	49.49	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.769	2.259	0.000	0.000
Crosswalk LOS	C	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	717	450	1150	634
d_b, Bicycle Delay [s]	24.69	36.02	10.83	28.00
l_b,int, Bicycle LOS Score for Intersection	5.414	1.560	2.941	2.508
Bicycle LOS	F	A	C	B

Sequence

Ring 1	-	2	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 17: Associated Road at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	35.9
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.842

Intersection Setup

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Associated Road			Associated Road			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	262	198	141	320	254	204	256	2033	270	191	1850	227
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	262	198	141	320	254	204	256	2033	270	191	1850	227
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	66	50	35	80	64	51	64	508	68	48	463	57
Total Analysis Volume [veh/h]	262	198	141	320	254	204	256	2033	270	191	1850	227
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	15	39	0	16	40	0	24	42	0	18	36	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	28	0	0	29	0	0	26	0	0	25	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	115	115	115	115	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	17	17	12	18	18	18	56	56	14	52	52
g / C, Green / Cycle	0.09	0.14	0.14	0.10	0.16	0.16	0.16	0.49	0.49	0.12	0.45	0.45
(v / s)_i Volume / Saturation Flow Rate	0.07	0.09	0.08	0.09	0.13	0.11	0.14	0.40	0.41	0.11	0.27	0.28
s, saturation flow rate [veh/h]	3500	1900	1900	3500	1900	1900	1800	3800	1900	1800	5700	1900
c, Capacity [veh/h]	322	274	274	367	299	299	285	1861	931	220	2583	861
d1, Uniform Delay [s]	51.29	46.54	45.97	50.74	47.17	45.78	47.50	25.00	25.40	49.63	23.62	23.85
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.12	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.01	2.67	1.93	6.47	6.70	2.75	10.49	4.15	8.90	10.12	1.04	3.27
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.81	0.66	0.58	0.87	0.85	0.68	0.90	0.82	0.84	0.87	0.60	0.61
d, Delay for Lane Group [s/veh]	56.29	49.21	47.91	57.22	53.87	48.52	57.98	29.15	34.30	59.74	24.65	27.12
Lane Group LOS	E	D	D	E	D	D	E	C	C	E	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.93	5.07	4.39	4.86	7.61	5.72	8.00	18.11	20.01	6.00	10.56	11.47
50th-Percentile Queue Length [ft/ln]	98.14	126.80	109.73	121.52	190.20	143.11	199.95	452.66	500.21	149.94	264.11	286.70
95th-Percentile Queue Length [veh/ln]	7.07	8.77	7.83	8.48	12.13	9.65	12.64	25.09	27.34	10.01	15.89	17.02
95th-Percentile Queue Length [ft/ln]	176.65	219.13	195.63	211.91	303.29	241.21	315.90	627.13	683.61	250.35	397.37	425.55

Movement, Approach, & Intersection Results

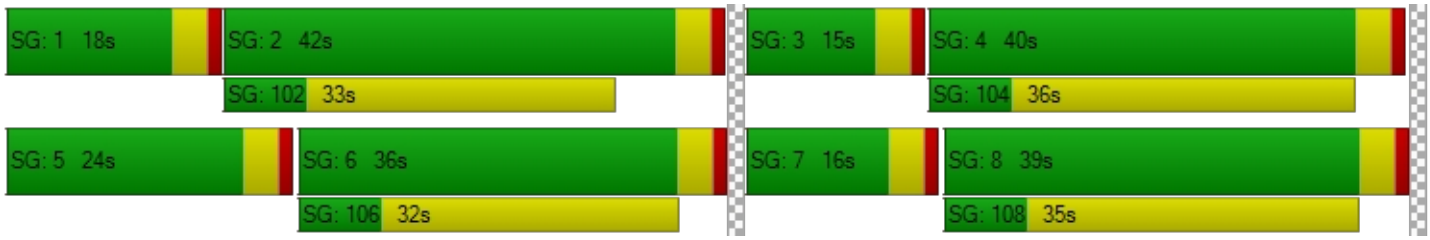
d_M, Delay for Movement [s/veh]	56.29	49.09	47.91	57.22	53.87	48.52	57.98	30.44	34.30	59.74	25.06	27.12
Movement LOS	E	D	D	E	D	D	E	C	C	E	C	C
d_A, Approach Delay [s/veh]	51.95			53.84			33.60			28.18		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	35.94											
Intersection LOS	D											
Intersection V/C	0.842											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	47.05	47.05	47.05	47.05
l_p,int, Pedestrian LOS Score for Intersection	2.568	2.702	3.331	3.318
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	608	626	661	556
d_b, Bicycle Delay [s]	27.84	27.15	25.80	29.97
l_b,int, Bicycle LOS Score for Intersection	2.055	2.843	2.967	2.495
Bicycle LOS	B	C	C	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 18: Castlegate Lane/Placentia Avenue at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	23.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.811

Intersection Setup

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Placentia Avenue			Castlegate Lane			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	211	18	276	28	12	13	26	2161	327	228	2180	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	211	18	276	28	12	13	26	2161	327	228	2180	50
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	53	5	69	7	3	3	7	540	82	57	545	13
Total Analysis Volume [veh/h]	211	18	276	28	12	13	26	2161	327	228	2180	50
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	26	0	0	10	0	10	32	0	22	44	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	15	0	0	0	0	0	21	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	16	16	16	4	4	3	41	41	13	51	51
g / C, Green / Cycle	0.17	0.17	0.17	0.05	0.05	0.03	0.45	0.45	0.15	0.57	0.57
(v / s)_i Volume / Saturation Flow Rate	0.07	0.07	0.15	0.02	0.01	0.01	0.38	0.17	0.13	0.39	0.40
s, saturation flow rate [veh/h]	1750	1750	1900	1800	1900	1800	5700	1900	1800	3800	1900
c, Capacity [veh/h]	304	304	330	90	96	60	2561	854	268	2148	1074
d1, Uniform Delay [s]	32.92	32.94	36.01	41.31	41.21	42.76	22.02	16.51	37.38	13.87	14.27
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.77	0.77	5.57	1.91	1.44	4.88	3.61	1.30	7.37	1.78	4.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.37	0.38	0.84	0.31	0.26	0.43	0.84	0.38	0.85	0.68	0.71
d, Delay for Lane Group [s/veh]	33.69	33.71	41.58	43.23	42.65	47.64	25.63	17.82	44.75	15.65	18.29
Lane Group LOS	C	C	D	D	D	D	C	B	D	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.24	2.25	6.26	0.64	0.57	0.64	13.46	4.60	5.36	10.03	11.40
50th-Percentile Queue Length [ft/ln]	55.90	56.35	156.41	16.06	14.19	16.10	336.58	115.03	133.99	250.69	284.94
95th-Percentile Queue Length [veh/ln]	4.02	4.06	10.36	1.16	1.02	1.16	19.48	8.12	9.16	15.22	16.93
95th-Percentile Queue Length [ft/ln]	100.61	101.43	258.96	28.91	25.54	28.97	487.02	202.97	228.90	380.53	423.35

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	33.70	33.71	41.58	43.23	42.65	42.65	47.64	25.63	17.82	44.75	16.52	18.29
Movement LOS	C	C	D	D	D	D	D	C	B	D	B	B
d_A, Approach Delay [s/veh]	38.01			42.95			24.84			19.17		
Approach LOS	D			D			C			B		
d_I, Intersection Delay [s/veh]	23.70											
Intersection LOS	C											
Intersection V/C	0.811											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.72	34.72	0.00	34.72
l_p,int, Pedestrian LOS Score for Intersection	2.392	1.988	0.000	3.279
Crosswalk LOS	B	A	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	488	133	622	888
d_b, Bicycle Delay [s]	25.73	39.24	21.40	13.92
l_b,int, Bicycle LOS Score for Intersection	2.393	1.647	2.942	2.912
Bicycle LOS	B	A	C	C

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

APPENDIX D-VII

YEAR 2045 PLUS PROJECT WITH IMPROVEMENTS TRAFFIC CONDITIONS

Brea Mall Expansion, Brea

Vistro File: N:\...\4099 HCM Network.vistro
Report File: N:\...\AM 2045+P-MIT.pdf

Scenario 18 [MIT] AM 2045+P
4/13/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
14	State College Boulevard at Imperial Highway	Signalized	HCM 6th Edition	SB Left	0.830	34.7	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 14: State College Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	34.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.830

Intersection Setup

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	125	186	479	151	502	33	37	1775	214	534	1953	203
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	125	186	479	151	502	33	37	1775	214	534	1953	203
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	31	47	120	38	126	8	9	444	54	134	488	51
Total Analysis Volume [veh/h]	125	186	479	151	502	33	37	1775	214	534	1953	203
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	13	44	0	10	41	0	10	37	0	24	51	51
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	30	0	0	28	0	0	23	0	0	26	26
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	115	115	115	115	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	6	32	32	6	32	32	4	42	42	19	57	67
g / C, Green / Cycle	0.05	0.27	0.27	0.05	0.27	0.27	0.04	0.37	0.37	0.17	0.50	0.58
(v / s)_i Volume / Saturation Flow Rate	0.04	0.05	0.25	0.04	0.13	0.02	0.01	0.26	0.27	0.15	0.34	0.11
s, saturation flow rate [veh/h]	3500	3800	1900	3500	3800	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	185	1041	521	185	1041	521	130	2080	693	592	2832	1111
d1, Uniform Delay [s]	53.52	31.89	40.55	53.94	34.95	30.86	53.92	31.36	31.64	46.88	22.15	11.11
k, delay calibration	0.11	0.11	0.26	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.23	0.08	14.71	8.39	0.35	0.05	1.19	2.11	6.67	5.42	1.40	0.36
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.67	0.18	0.92	0.81	0.48	0.06	0.28	0.71	0.73	0.90	0.69	0.18
d, Delay for Lane Group [s/veh]	57.76	31.97	55.26	62.32	35.29	30.92	55.11	33.47	38.30	52.30	23.55	11.48
Lane Group LOS	E	C	E	E	D	C	E	C	D	D	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.88	2.00	15.13	2.38	5.92	0.69	0.54	12.03	13.30	7.91	13.42	2.47
50th-Percentile Queue Length [ft/ln]	47.11	49.93	378.24	59.43	148.04	17.23	13.58	300.75	332.61	197.63	335.49	61.83
95th-Percentile Queue Length [veh/ln]	3.39	3.59	21.51	4.28	9.91	1.24	0.98	17.72	19.29	12.52	19.43	4.45
95th-Percentile Queue Length [ft/ln]	84.80	89.87	537.71	106.97	247.81	31.01	24.44	442.96	482.16	312.90	485.68	111.29

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	57.76	31.97	55.26	62.32	35.29	30.92	55.11	34.27	38.30	52.30	23.55	11.48
Movement LOS	E	C	E	E	D	C	E	C	D	D	C	B
d_A, Approach Delay [s/veh]	50.17			41.03			35.07			28.35		
Approach LOS	D			D			D			C		
d_I, Intersection Delay [s/veh]	34.74											
Intersection LOS	C											
Intersection V/C	0.830											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	47.05	47.05	47.05	47.05
l_p,int, Pedestrian LOS Score for Intersection	2.890	2.761	3.309	3.475
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	695	643	574	817
d_b, Bicycle Delay [s]	24.47	26.47	29.25	20.12
l_b,int, Bicycle LOS Score for Intersection	2.211	2.126	2.395	3.039
Bicycle LOS	B	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Brea Mall Expansion, Brea

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Scenario 17 [MIT] PM 2045+P
4/13/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
14	State College Boulevard at Imperial Highway	Signalized	HCM 6th Edition	EB Right	0.961	48.0	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 14: State College Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	48.0
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.961

Intersection Setup

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	391	655	471	481	339	103	118	2096	122	497	2061	591
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	391	655	471	481	339	103	118	2096	122	497	2061	591
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	98	164	118	120	85	26	30	524	31	124	515	148
Total Analysis Volume [veh/h]	391	655	471	481	339	103	118	2096	122	497	2061	591
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	21	41	0	21	41	0	10	37	0	21	48	48
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	30	0	0	28	0	0	23	0	0	26	26
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	15	33	33	17	34	34	6	37	37	17	48	69
g / C, Green / Cycle	0.13	0.27	0.27	0.14	0.29	0.29	0.05	0.31	0.31	0.14	0.40	0.58
(v / s)_i Volume / Saturation Flow Rate	0.11	0.17	0.25	0.14	0.09	0.05	0.03	0.29	0.31	0.14	0.36	0.31
s, saturation flow rate [veh/h]	3500	3800	1900	3500	3800	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	452	1035	517	498	1085	542	177	1766	589	498	2289	1097
d1, Uniform Delay [s]	51.27	38.43	42.29	51.22	33.68	32.43	56.03	40.14	41.20	51.49	33.69	15.58
k, delay calibration	0.11	0.11	0.32	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.06	0.65	16.08	12.20	0.16	0.17	4.28	9.97	33.85	18.15	6.24	1.90
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.86	0.63	0.91	0.97	0.31	0.19	0.67	0.93	0.99	1.00	0.90	0.54
d, Delay for Lane Group [s/veh]	56.33	39.08	58.37	63.41	33.84	32.60	60.31	50.11	75.05	69.64	39.92	17.48
Lane Group LOS	E	D	E	E	C	C	E	D	E	E	D	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	6.08	8.55	15.70	8.02	3.92	2.31	1.86	17.04	22.36	8.71	19.67	10.19
50th-Percentile Queue Length [ft/ln]	151.94	213.77	392.39	200.45	98.01	57.63	46.60	426.06	558.91	217.70	491.70	254.70
95th-Percentile Queue Length [veh/ln]	10.12	13.35	22.19	12.66	7.06	4.15	3.36	23.81	30.11	13.55	26.94	15.42
95th-Percentile Queue Length [ft/ln]	253.02	333.67	554.82	316.55	176.42	103.73	83.88	595.31	752.77	338.69	673.53	385.57

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	56.33	39.08	58.37	63.41	33.84	32.60	60.31	55.57	75.05	69.64	39.92	17.48
Movement LOS	E	D	E	E	C	C	E	E	E	E	D	B
d_A, Approach Delay [s/veh]	49.51			49.11			56.82			40.40		
Approach LOS	D			D			E			D		
d_I, Intersection Delay [s/veh]	48.00											
Intersection LOS	D											
Intersection V/C	0.961											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.54	49.54	49.54	49.54
l_p,int, Pedestrian LOS Score for Intersection	2.952	2.926	3.393	3.584
Crosswalk LOS	C	C	C	D
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	616	616	550	733
d_b, Bicycle Delay [s]	28.73	28.73	31.57	24.09
l_b,int, Bicycle LOS Score for Intersection	2.811	2.321	2.523	3.292
Bicycle LOS	C	B	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Brea Mall Expansion, Brea

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Scenario 16 [MIT] Sat MD 2045+P
4/13/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
14	State College Boulevard at Imperial Highway	Signalized	HCM 6th Edition	WB Left	1.286	107.4	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 14: State College Boulevard at Imperial Highway

Control Type:	Signalized	Delay (sec / veh):	107.4
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.286

Intersection Setup

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State College Boulevard			State College Boulevard			Imperial Highway			Imperial Highway		
Base Volume Input [veh/h]	331	665	780	677	464	195	146	1791	244	699	2208	1173
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	331	665	780	677	464	195	146	1791	244	699	2208	1173
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	83	166	195	169	116	49	37	448	61	175	552	293
Total Analysis Volume [veh/h]	331	665	780	677	464	195	146	1791	244	699	2208	1173
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	2	0	1	6	6
Auxiliary Signal Groups												6,7
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	6
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	25	42	0	22	39	0	10	34	0	22	46	46
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	30	0	0	28	0	0	23	0	0	26	26
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	14	38	38	18	42	42	6	30	30	18	42	64
g / C, Green / Cycle	0.11	0.32	0.32	0.15	0.35	0.35	0.05	0.25	0.25	0.15	0.35	0.53
(v / s)_i Volume / Saturation Flow Rate	0.09	0.18	0.41	0.19	0.12	0.10	0.04	0.27	0.27	0.20	0.39	0.62
s, saturation flow rate [veh/h]	3500	3800	1900	3500	3800	1900	3500	5700	1900	3500	5700	1900
c, Capacity [veh/h]	400	1198	599	525	1333	667	176	1433	478	525	2002	1016
d1, Uniform Delay [s]	51.98	34.11	41.09	51.00	28.80	28.18	56.49	44.93	44.93	51.00	38.93	27.93
k, delay calibration	0.11	0.11	0.50	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.39	0.40	147.98	133.21	0.16	0.24	9.67	41.73	64.24	151.75	54.52	81.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.83	0.56	1.30	1.29	0.35	0.29	0.83	1.06	1.08	1.33	1.10	1.15
d, Delay for Lane Group [s/veh]	56.36	34.51	189.07	184.21	28.96	28.42	66.16	86.65	109.16	202.75	93.45	108.95
Lane Group LOS	E	C	F	F	C	C	E	F	F	F	F	F
Critical Lane Group	No	No	Yes	No	No	No	No	No	Yes	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	5.11	8.10	42.04	17.58	4.98	4.11	2.43	19.63	22.61	18.94	29.40	50.47
50th-Percentile Queue Length [ft/ln]	127.83	202.40	1051.00	439.56	124.47	102.87	60.71	490.65	565.29	473.38	735.07	1261.75
95th-Percentile Queue Length [veh/ln]	8.82	12.76	61.49	27.25	8.64	7.41	4.37	27.85	31.83	29.38	40.91	69.50
95th-Percentile Queue Length [ft/ln]	220.54	319.06	1537.15	681.17	215.96	185.17	109.28	696.32	795.78	734.56	1022.80	1737.56

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	56.36	34.51	189.07	184.21	28.96	28.42	66.16	90.07	109.16	202.75	93.45	108.95
Movement LOS	E	C	F	F	C	C	E	F	F	F	F	F
d_A, Approach Delay [s/veh]	106.47			107.55			90.60			116.63		
Approach LOS	F			F			F			F		
d_I, Intersection Delay [s/veh]	107.36											
Intersection LOS	F											
Intersection V/C	1.286											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.51	49.51	49.51	49.51
l_p,int, Pedestrian LOS Score for Intersection	3.051	3.070	3.395	3.695
Crosswalk LOS	C	C	C	D
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	633	583	500	700
d_b, Bicycle Delay [s]	28.02	30.11	33.75	25.35
l_b,int, Bicycle LOS Score for Intersection	3.025	2.662	2.459	3.804
Bicycle LOS	C	B	B	D

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

APPENDIX E

YEAR 2045 MODELING WORKSHEETS

1. State College Boulevard at Lambert Road

AM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	151	NORTHBOUND	
	THRU	192	IN ...	483
	RIGHT	133	OUT ...	1338
SOUTH BOUND	LEFT	865	SOUTHBOUND	
	THRU	582	IN ...	1481
	RIGHT	8	OUT ...	665
EAST BOUND	LEFT	14	EASTBOUND	
	THRU	1220	IN ...	1625
	RIGHT	196	OUT ...	1481
WEST BOUND	LEFT	431	WESTBOUND	
	THRU	1519	IN ...	2259
	RIGHT	534	OUT ...	2365

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	151	182
	THRU	192	233
	RIGHT	133	216
SOUTH BOUND	LEFT	865	972
	THRU	582	629
	RIGHT	8	8
EAST BOUND	LEFT	14	16
	THRU	1,220	1,474
	RIGHT	196	243
WEST BOUND	LEFT	431	503
	THRU	1,519	1,896
	RIGHT	534	605

2. SR-57 SB Ramps at Lambert Road

AM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	0	NORTHBOUND	
	THRU	0	IN ...	0
	RIGHT	0	OUT ...	682
SOUTH BOUND	LEFT	1026	SOUTHBOUND	
	THRU	0	IN ...	1583
	RIGHT	513	OUT ...	0
EAST BOUND	LEFT	0	EASTBOUND	
	THRU	1659	IN ...	2371
	RIGHT	565	OUT ...	2315
WEST BOUND	LEFT	217	WESTBOUND	
	THRU	2027	IN ...	2020
	RIGHT	0	OUT ...	2976

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	0	0
	THRU	0	0
	RIGHT	0	0
SOUTH BOUND	LEFT	1,026	1,105
	THRU	0	0
	RIGHT	513	743
EAST BOUND	LEFT	0	0
	THRU	1,659	2,001
	RIGHT	565	667
WEST BOUND	LEFT	217	271
	THRU	2,027	2,325
	RIGHT	0	0

3. SR-57 NB Ramps at Lambert Road

AM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	1019	NORTHBOUND	
	THRU	0	IN ...	1,466
	RIGHT	482	OUT ...	0
SOUTH BOUND	LEFT	0	SOUTHBOUND	
	THRU	0	IN ...	0
	RIGHT	0	OUT ...	787
EAST BOUND	LEFT	275	EASTBOUND	
	THRU	2399	IN ...	2,965
	RIGHT	0	OUT ...	2,032
WEST BOUND	LEFT	0	WESTBOUND	
	THRU	1237	IN ...	1,562
	RIGHT	475	OUT ...	3,174

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	1,019	1,134
	THRU	0	0
	RIGHT	482	542
SOUTH BOUND	LEFT	0	0
	THRU	0	0
	RIGHT	0	0
EAST BOUND	LEFT	275	428
	THRU	2,399	2,660
	RIGHT	0	0
WEST BOUND	LEFT	0	0
	THRU	1,237	1,473
	RIGHT	475	523

4. Randolph Avenue at Birch Street

AM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	23	NORTHBOUND	
	THRU	40	IN ...	138
	RIGHT	85	OUT ...	127
SOUTH BOUND	LEFT	37	SOUTHBOUND	
	THRU	35	IN ...	157
	RIGHT	25	OUT ...	129
EAST BOUND	LEFT	39	EASTBOUND	
	THRU	554	IN ...	690
	RIGHT	89	OUT ...	586
WEST BOUND	LEFT	70	WESTBOUND	
	THRU	468	IN ...	653
	RIGHT	43	OUT ...	797

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	23	26
	THRU	40	44
	RIGHT	85	98
SOUTH BOUND	LEFT	37	86
	THRU	35	38
	RIGHT	25	37
EAST BOUND	LEFT	39	43
	THRU	554	653
	RIGHT	89	99
WEST BOUND	LEFT	70	84
	THRU	468	594
	RIGHT	43	61

5. State College Boulevard at Birch Street

AM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	76	NORTHBOUND	
	THRU	120	IN ...	288
	RIGHT	96	OUT ...	1,101
SOUTH BOUND	LEFT	628	SOUTHBOUND	
	THRU	779	IN ...	1,673
	RIGHT	145	OUT ...	463
EAST BOUND	LEFT	75	EASTBOUND	
	THRU	502	IN ...	745
	RIGHT	47	OUT ...	848
WEST BOUND	LEFT	78	WESTBOUND	
	THRU	555	IN ...	995
	RIGHT	273	OUT ...	1,287

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	76	80
	THRU	120	159
	RIGHT	96	105
SOUTH BOUND	LEFT	628	731
	THRU	779	928
	RIGHT	145	244
EAST BOUND	LEFT	75	121
	THRU	502	593
	RIGHT	47	69
WEST BOUND	LEFT	78	103
	THRU	555	622
	RIGHT	273	319

6. S Associated Road at Birch Street

AM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	234	NORTHBOUND	
	THRU	6	IN ...	542
	RIGHT	307	OUT ...	554
SOUTH BOUND	LEFT	55	SOUTHBOUND	
	THRU	28	IN ...	91
	RIGHT	8	OUT ...	19
EAST BOUND	LEFT	2	EASTBOUND	
	THRU	909	IN ...	1,211
	RIGHT	302	OUT ...	1,060
WEST BOUND	LEFT	341	WESTBOUND	
	THRU	747	IN ...	1,136
	RIGHT	11	OUT ...	1,348

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	234	268
	THRU	6	6
	RIGHT	307	339
SOUTH BOUND	LEFT	55	60
	THRU	28	30
	RIGHT	8	9
EAST BOUND	LEFT	2	5
	THRU	909	1,035
	RIGHT	302	352
WEST BOUND	LEFT	341	375
	THRU	747	829
	RIGHT	11	12

7. Randolph Avenue at Madison Way

AM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	25	NORTHBOUND	
	THRU	130	IN ...	153
	RIGHT	8	OUT ...	109
SOUTH BOUND	LEFT	6	SOUTHBOUND	
	THRU	119	IN ...	72
	RIGHT	14	OUT ...	152
EAST BOUND	LEFT	32	EASTBOUND	
	THRU	2	IN ...	91
	RIGHT	57	OUT ...	39
WEST BOUND	LEFT	0	WESTBOUND	
	THRU	0	IN ...	0
	RIGHT	0	OUT ...	16

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	25	28
	THRU	130	146
	RIGHT	8	9
SOUTH BOUND	LEFT	6	6
	THRU	119	137
	RIGHT	14	18
EAST BOUND	LEFT	32	36
	THRU	2	3
	RIGHT	57	62
WEST BOUND	LEFT	0	0
	THRU	0	0
	RIGHT	0	0

8. Randolph Avenue at Brea Mall

AM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	13	NORTHBOUND	
	THRU	163	IN ...	232
	RIGHT	66	OUT ...	101
SOUTH BOUND	LEFT	15	SOUTHBOUND	
	THRU	141	IN ...	95
	RIGHT	6	OUT ...	159
EAST BOUND	LEFT	1	EASTBOUND	
	THRU	0	IN ...	2
	RIGHT	1	OUT ...	19
WEST BOUND	LEFT	26	WESTBOUND	
	THRU	0	IN ...	31
	RIGHT	5	OUT ...	81

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	13	14
	THRU	163	190
	RIGHT	66	72
SOUTH BOUND	LEFT	15	17
	THRU	141	166
	RIGHT	6	6
EAST BOUND	LEFT	1	1
	THRU	0	0
	RIGHT	1	1
WEST BOUND	LEFT	26	28
	THRU	0	0
	RIGHT	5	7

9. Brea Mall South at State College Boulevard

AM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	32	NORTHBOUND	
	THRU	5	IN ...	52
	RIGHT	15	OUT ...	44
SOUTH BOUND	LEFT	3	SOUTHBOUND	
	THRU	2	IN ...	32
	RIGHT	27	OUT ...	94
EAST BOUND	LEFT	77	EASTBOUND	
	THRU	238	IN ...	326
	RIGHT	15	OUT ...	575
WEST BOUND	LEFT	27	WESTBOUND	
	THRU	319	IN ...	555
	RIGHT	12	OUT ...	252

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	32	34
	THRU	5	9
	RIGHT	15	17
SOUTH BOUND	LEFT	3	3
	THRU	2	6
	RIGHT	27	28
EAST BOUND	LEFT	77	84
	THRU	238	284
	RIGHT	15	17
WEST BOUND	LEFT	27	30
	THRU	319	512
	RIGHT	12	15

10. Harbor Boulevard at Imperial Highway

AM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	302	NORTHBOUND	
	THRU	601	IN ...	1390
	RIGHT	259	OUT ...	2666
SOUTH BOUND	LEFT	143	SOUTHBOUND	
	THRU	1241	IN ...	1795
	RIGHT	279	OUT ...	1143
EAST BOUND	LEFT	183	EASTBOUND	
	THRU	1296	IN ...	2323
	RIGHT	361	OUT ...	1806
WEST BOUND	LEFT	282	WESTBOUND	
	THRU	1143	IN ...	1714
	RIGHT	99	OUT ...	1605

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	302	387
	THRU	601	773
	RIGHT	259	293
SOUTH BOUND	LEFT	143	179
	THRU	1,241	1,484
	RIGHT	279	334
EAST BOUND	LEFT	183	303
	THRU	1,296	1,465
	RIGHT	361	759
WEST BOUND	LEFT	282	424
	THRU	1,143	1,309
	RIGHT	99	275

11. Puente Street at Imperial Highway

AM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	59	NORTHBOUND	
	THRU	113	IN ...	206
	RIGHT	152	OUT ...	212
SOUTH BOUND	LEFT	120	SOUTHBOUND	
	THRU	84	IN ...	679
	RIGHT	133	OUT ...	465
EAST BOUND	LEFT	218	EASTBOUND	
	THRU	1314	IN ...	1,700
	RIGHT	78	OUT ...	1,696
WEST BOUND	LEFT	48	WESTBOUND	
	THRU	1195	IN ...	1,639
	RIGHT	156	OUT ...	1,851

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	59	64
	THRU	113	124
	RIGHT	152	166
SOUTH BOUND	LEFT	120	295
	THRU	84	121
	RIGHT	133	263
EAST BOUND	LEFT	218	246
	THRU	1,314	1,450
	RIGHT	78	85
WEST BOUND	LEFT	48	53
	THRU	1,195	1,553
	RIGHT	156	193

12. Brea Boulevard at Imperial Highway

AM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	426	NORTHBOUND	
	THRU	452	IN ...	1,212
	RIGHT	142	OUT ...	1,817
SOUTH BOUND	LEFT	126	SOUTHBOUND	
	THRU	944	IN ...	1,544
	RIGHT	163	OUT ...	807
EAST BOUND	LEFT	130	EASTBOUND	
	THRU	1478	IN ...	2,223
	RIGHT	345	OUT ...	2,131
WEST BOUND	LEFT	150	WESTBOUND	
	THRU	1409	IN ...	1,815
	RIGHT	63	OUT ...	2,039

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	426	473
	THRU	452	579
	RIGHT	142	187
SOUTH BOUND	LEFT	126	181
	THRU	944	1,217
	RIGHT	163	219
EAST BOUND	LEFT	130	174
	THRU	1,478	1,689
	RIGHT	345	395
WEST BOUND	LEFT	150	205
	THRU	1,409	1,769
	RIGHT	63	122

13. Randolph Avenue at Imperial Highway

AM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	15	NORTHBOUND	
	THRU	14	IN ...	84
	RIGHT	53	OUT ...	47
SOUTH BOUND	LEFT	125	SOUTHBOUND	
	THRU	14	IN ...	183
	RIGHT	29	OUT ...	278
EAST BOUND	LEFT	58	EASTBOUND	
	THRU	1516	IN ...	1,876
	RIGHT	9	OUT ...	1,703
WEST BOUND	LEFT	24	WESTBOUND	
	THRU	1466	IN ...	1,797
	RIGHT	143	OUT ...	1,913

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	15	39
	THRU	14	20
	RIGHT	53	71
SOUTH BOUND	LEFT	125	140
	THRU	14	22
	RIGHT	29	41
EAST BOUND	LEFT	58	96
	THRU	1,516	1,741
	RIGHT	9	27
WEST BOUND	LEFT	24	43
	THRU	1,466	1,880
	RIGHT	143	164

14. State College Boulevard at Imperial Highway

AM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	97	NORTHBOUND	
	THRU	137	IN ...	706
	RIGHT	397	OUT ...	1,206
SOUTH BOUND	LEFT	84	SOUTHBOUND	
	THRU	341	IN ...	648
	RIGHT	26	OUT ...	300
EAST BOUND	LEFT	33	EASTBOUND	
	THRU	1518	IN ...	1,941
	RIGHT	171	OUT ...	1,804
WEST BOUND	LEFT	431	WESTBOUND	
	THRU	1517	IN ...	2,353
	RIGHT	134	OUT ...	2,339

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	97	121
	THRU	137	168
	RIGHT	397	479
SOUTH BOUND	LEFT	84	127
	THRU	341	487
	RIGHT	26	33
EAST BOUND	LEFT	33	37
	THRU	1,518	1,733
	RIGHT	171	204
WEST BOUND	LEFT	431	534
	THRU	1,517	1,937
	RIGHT	134	153

15. SR-57 SB Ramps at Imperial Highway

AM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	0	NORTHBOUND	
	THRU	0	IN ...	0
	RIGHT	0	OUT ...	622
SOUTH BOUND	LEFT	574	SOUTHBOUND	
	THRU	0	IN ...	1,167
	RIGHT	460	OUT ...	167
EAST BOUND	LEFT	0	EASTBOUND	
	THRU	1410	IN ...	2,389
	RIGHT	639	OUT ...	2,376
WEST BOUND	LEFT	0	WESTBOUND	
	THRU	1645	IN ...	1,957
	RIGHT	180	OUT ...	2,347

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	0	0
	THRU	0	0
	RIGHT	0	0
SOUTH BOUND	LEFT	574	642
	THRU	0	0
	RIGHT	460	570
EAST BOUND	LEFT	0	0
	THRU	1,410	1,750
	RIGHT	639	762
WEST BOUND	LEFT	0	0
	THRU	1,645	2,063
	RIGHT	180	212

16. SR-57 NB Ramps at Imperial Highway

AM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	831	NORTHBOUND	
	THRU	175	IN ...	1,775
	RIGHT	783	OUT ...	610
SOUTH BOUND	LEFT	0	SOUTHBOUND	
	THRU	0	IN ...	95
	RIGHT	95	OUT ...	341
EAST BOUND	LEFT	160	EASTBOUND	
	THRU	1281	IN ...	2,335
	RIGHT	531	OUT ...	2,528
WEST BOUND	LEFT	0	WESTBOUND	
	THRU	1400	IN ...	1,675
	RIGHT	6	OUT ...	2,399

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	831	1,071
	THRU	175	164
	RIGHT	783	893
SOUTH BOUND	LEFT	0	0
	THRU	0	0
	RIGHT	95	95
EAST BOUND	LEFT	160	170
	THRU	1,281	1,559
	RIGHT	531	610
WEST BOUND	LEFT	0	0
	THRU	1,400	1,663
	RIGHT	6	14

17. Associated Road at Imperial Highway

AM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	144	NORTHBOUND	
	THRU	202	IN ...	420
	RIGHT	69	OUT ...	347
SOUTH BOUND	LEFT	145	SOUTHBOUND	
	THRU	320	IN ...	438
	RIGHT	143	OUT ...	352
EAST BOUND	LEFT	145	EASTBOUND	
	THRU	1794	IN ...	2371
	RIGHT	97	OUT ...	2094
WEST BOUND	LEFT	89	WESTBOUND	
	THRU	1538	IN ...	2008
	RIGHT	82	OUT ...	2445

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	144	155
	THRU	202	222
	RIGHT	69	95
SOUTH BOUND	LEFT	145	179
	THRU	320	352
	RIGHT	143	174
EAST BOUND	LEFT	145	227
	THRU	1,794	2,209
	RIGHT	97	107
WEST BOUND	LEFT	89	98
	THRU	1,538	1,831
	RIGHT	82	107

18. Castlegate Lane/Placentia Avenue at Imperial Highway

AM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	168	NORTHBOUND	
	THRU	12	IN ...	345
	RIGHT	141	OUT ...	723
SOUTH BOUND	LEFT	24	SOUTHBOUND	
	THRU	27	IN ...	65
	RIGHT	14	OUT ...	57
EAST BOUND	LEFT	13	EASTBOUND	
	THRU	1756	IN ...	2553
	RIGHT	347	OUT ...	1887
WEST BOUND	LEFT	170	WESTBOUND	
	THRU	1406	IN ...	1901
	RIGHT	32	OUT ...	2197

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	168	197
	THRU	12	13
	RIGHT	141	156
SOUTH BOUND	LEFT	24	26
	THRU	27	29
	RIGHT	14	15
EAST BOUND	LEFT	13	15
	THRU	1,756	2,039
	RIGHT	347	490
WEST BOUND	LEFT	170	204
	THRU	1,406	1,675
	RIGHT	32	35

1. State College Boulevard at Lambert Road

PM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	302	NORTHBOUND	
	THRU	576	IN ...	1196
	RIGHT	253	OUT ...	924
SOUTH BOUND	LEFT	545	SOUTHBOUND	
	THRU	372	IN ...	878
	RIGHT	15	OUT ...	1298
EAST BOUND	LEFT	38	EASTBOUND	
	THRU	1140	IN ...	1248
	RIGHT	245	OUT ...	1425
WEST BOUND	LEFT	316	WESTBOUND	
	THRU	1008	IN ...	2087
	RIGHT	686	OUT ...	1760

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	302	336
	THRU	576	646
	RIGHT	253	335
SOUTH BOUND	LEFT	545	616
	THRU	372	432
	RIGHT	15	17
EAST BOUND	LEFT	38	42
	THRU	1,140	1,594
	RIGHT	245	282
WEST BOUND	LEFT	316	429
	THRU	1,008	1,267
	RIGHT	686	778

2. SR-57 SB Ramps at Lambert Road

PM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	0	NORTHBOUND	
	THRU	0	IN ...	0
	RIGHT	0	OUT ...	949
SOUTH BOUND	LEFT	443	SOUTHBOUND	
	THRU	0	IN ...	1174
	RIGHT	697	OUT ...	0
EAST BOUND	LEFT	0	EASTBOUND	
	THRU	1115	IN ...	1683
	RIGHT	746	OUT ...	2384
WEST BOUND	LEFT	226	WESTBOUND	
	THRU	1610	IN ...	1922
	RIGHT	0	OUT ...	1447

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	0	0
	THRU	0	0
	RIGHT	0	0
SOUTH BOUND	LEFT	443	494
	THRU	0	0
	RIGHT	697	914
EAST BOUND	LEFT	0	0
	THRU	1,115	1,563
	RIGHT	746	900
WEST BOUND	LEFT	226	277
	THRU	1,610	1,886
	RIGHT	0	0

3. SR-57 NB Ramps at Lambert Road

PM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	636	NORTHBOUND	
	THRU	0	IN ...	847
	RIGHT	260	OUT ...	0
SOUTH BOUND	LEFT	0	SOUTHBOUND	
	THRU	0	IN ...	0
	RIGHT	0	OUT ...	896
EAST BOUND	LEFT	356	EASTBOUND	
	THRU	1407	IN ...	1,652
	RIGHT	0	OUT ...	1,746
WEST BOUND	LEFT	0	WESTBOUND	
	THRU	1024	IN ...	1,718
	RIGHT	511	OUT ...	1,573

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	636	728
	THRU	0	0
	RIGHT	260	329
SOUTH BOUND	LEFT	0	0
	THRU	0	0
	RIGHT	0	0
EAST BOUND	LEFT	356	615
	THRU	1,407	1,663
	RIGHT	0	0
WEST BOUND	LEFT	0	0
	THRU	1,024	1,244
	RIGHT	511	569

4. Randolph Avenue at Birch Street

PM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	129	NORTHBOUND	
	THRU	56	IN ...	403
	RIGHT	162	OUT ...	330
SOUTH BOUND	LEFT	50	SOUTHBOUND	
	THRU	48	IN ...	217
	RIGHT	106	OUT ...	217
EAST BOUND	LEFT	77	EASTBOUND	
	THRU	608	IN ...	817
	RIGHT	93	OUT ...	1,359
WEST BOUND	LEFT	183	WESTBOUND	
	THRU	1034	IN ...	1,343
	RIGHT	38	OUT ...	875

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	129	143
	THRU	56	75
	RIGHT	162	186
SOUTH BOUND	LEFT	50	55
	THRU	48	53
	RIGHT	106	112
EAST BOUND	LEFT	77	93
	THRU	608	767
	RIGHT	93	103
WEST BOUND	LEFT	183	206
	THRU	1,034	1,212
	RIGHT	38	49

5. State College Boulevard at Birch Street

PM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	139	NORTHBOUND	
	THRU	353	IN ...	723
	RIGHT	156	OUT ...	624
SOUTH BOUND	LEFT	310	SOUTHBOUND	
	THRU	324	IN ...	864
	RIGHT	257	OUT ...	1,206
EAST BOUND	LEFT	194	EASTBOUND	
	THRU	741	IN ...	1,144
	RIGHT	154	OUT ...	1,433
WEST BOUND	LEFT	141	WESTBOUND	
	THRU	949	IN ...	1,780
	RIGHT	602	OUT ...	1,248

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	139	161
	THRU	353	447
	RIGHT	156	174
SOUTH BOUND	LEFT	310	369
	THRU	324	397
	RIGHT	257	344
EAST BOUND	LEFT	194	308
	THRU	741	840
	RIGHT	154	164
WEST BOUND	LEFT	141	147
	THRU	949	1,074
	RIGHT	602	707

6. S Associated Road at Birch Street

PM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	460	NORTHBOUND	
	THRU	32	IN ...	830
	RIGHT	342	OUT ...	548
SOUTH BOUND	LEFT	11	SOUTHBOUND	
	THRU	19	IN ...	36
	RIGHT	6	OUT ...	62
EAST BOUND	LEFT	13	EASTBOUND	
	THRU	855	IN ...	1,183
	RIGHT	287	OUT ...	1,735
WEST BOUND	LEFT	284	WESTBOUND	
	THRU	1213	IN ...	1,566
	RIGHT	17	OUT ...	1,270

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	460	525
	THRU	32	35
	RIGHT	342	373
SOUTH BOUND	LEFT	11	12
	THRU	19	21
	RIGHT	6	9
EAST BOUND	LEFT	13	17
	THRU	855	978
	RIGHT	287	330
WEST BOUND	LEFT	284	310
	THRU	1,213	1,384
	RIGHT	17	18

7. Randolph Avenue at Madison Way

PM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	46	NORTHBOUND	
	THRU	308	IN ...	451
	RIGHT	41	OUT ...	373
SOUTH BOUND	LEFT	27	SOUTHBOUND	
	THRU	245	IN ...	305
	RIGHT	27	OUT ...	461
EAST BOUND	LEFT	60	EASTBOUND	
	THRU	4	IN ...	114
	RIGHT	50	OUT ...	77
WEST BOUND	LEFT	72	WESTBOUND	
	THRU	4	IN ...	113
	RIGHT	37	OUT ...	72

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	46	48
	THRU	308	361
	RIGHT	41	45
SOUTH BOUND	LEFT	27	29
	THRU	245	273
	RIGHT	27	32
EAST BOUND	LEFT	60	68
	THRU	4	4
	RIGHT	50	55
WEST BOUND	LEFT	72	79
	THRU	4	4
	RIGHT	37	38

8. Randolph Avenue at Brea Mall

PM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	16	NORTHBOUND	
	THRU	314	IN ...	696
	RIGHT	310	OUT ...	626
SOUTH BOUND	LEFT	36	SOUTHBOUND	
	THRU	345	IN ...	406
	RIGHT	19	OUT ...	432
EAST BOUND	LEFT	17	EASTBOUND	
	THRU	3	IN ...	32
	RIGHT	12	OUT ...	38
WEST BOUND	LEFT	263	WESTBOUND	
	THRU	3	IN ...	311
	RIGHT	45	OUT ...	349

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	16	17
	THRU	314	367
	RIGHT	310	338
SOUTH BOUND	LEFT	36	39
	THRU	345	392
	RIGHT	19	21
EAST BOUND	LEFT	17	18
	THRU	3	3
	RIGHT	12	12
WEST BOUND	LEFT	263	288
	THRU	3	3
	RIGHT	45	48

9. Brea Mall South at State College Boulevard

PM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	138	NORTHBOUND	
	THRU	19	IN ...	221
	RIGHT	64	OUT ...	130
SOUTH BOUND	LEFT	43	SOUTHBOUND	
	THRU	13	IN ...	424
	RIGHT	368	OUT ...	520
EAST BOUND	LEFT	475	EASTBOUND	
	THRU	494	IN ...	1068
	RIGHT	22	OUT ...	925
WEST BOUND	LEFT	95	WESTBOUND	
	THRU	414	IN ...	540
	RIGHT	26	OUT ...	678

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	138	151
	THRU	19	26
	RIGHT	64	67
SOUTH BOUND	LEFT	43	45
	THRU	13	20
	RIGHT	368	402
EAST BOUND	LEFT	475	519
	THRU	494	596
	RIGHT	22	23
WEST BOUND	LEFT	95	104
	THRU	414	490
	RIGHT	26	28

10. Harbor Boulevard at Imperial Highway

PM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	426	NORTHBOUND	
	THRU	1091	IN ...	2374
	RIGHT	211	OUT ...	1892
SOUTH BOUND	LEFT	196	SOUTHBOUND	
	THRU	852	IN ...	1525
	RIGHT	306	OUT ...	1687
EAST BOUND	LEFT	268	EASTBOUND	
	THRU	1189	IN ...	1837
	RIGHT	287	OUT ...	2645
WEST BOUND	LEFT	425	WESTBOUND	
	THRU	1498	IN ...	2110
	RIGHT	219	OUT ...	1622

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	426	786
	THRU	1,091	1,305
	RIGHT	211	282
SOUTH BOUND	LEFT	196	288
	THRU	852	1,020
	RIGHT	306	439
EAST BOUND	LEFT	268	336
	THRU	1,189	1,353
	RIGHT	287	417
WEST BOUND	LEFT	425	455
	THRU	1,498	1,686
	RIGHT	219	299

11. Puente Street at Imperial Highway

PM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	35	NORTHBOUND	
	THRU	47	IN ...	159
	RIGHT	81	OUT ...	182
SOUTH BOUND	LEFT	163	SOUTHBOUND	
	THRU	104	IN ...	496
	RIGHT	204	OUT ...	573
EAST BOUND	LEFT	125	EASTBOUND	
	THRU	1421	IN ...	1,702
	RIGHT	37	OUT ...	1,981
WEST BOUND	LEFT	103	WESTBOUND	
	THRU	1643	IN ...	2,279
	RIGHT	253	OUT ...	1,900

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	35	38
	THRU	47	51
	RIGHT	81	89
SOUTH BOUND	LEFT	163	236
	THRU	104	113
	RIGHT	204	228
EAST BOUND	LEFT	125	146
	THRU	1,421	1,694
	RIGHT	37	40
WEST BOUND	LEFT	103	112
	THRU	1,643	1,915
	RIGHT	253	399

12. Brea Boulevard at Imperial Highway

PM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	504	NORTHBOUND	
	THRU	802	IN ...	1,796
	RIGHT	243	OUT ...	1,389
SOUTH BOUND	LEFT	205	SOUTHBOUND	
	THRU	629	IN ...	1,137
	RIGHT	175	OUT ...	1,378
EAST BOUND	LEFT	187	EASTBOUND	
	THRU	1650	IN ...	2,385
	RIGHT	405	OUT ...	2,627
WEST BOUND	LEFT	224	WESTBOUND	
	THRU	1687	IN ...	2,292
	RIGHT	138	OUT ...	2,215

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	504	553
	THRU	802	983
	RIGHT	243	290
SOUTH BOUND	LEFT	205	277
	THRU	629	710
	RIGHT	175	228
EAST BOUND	LEFT	187	254
	THRU	1,650	1,928
	RIGHT	405	455
WEST BOUND	LEFT	224	266
	THRU	1,687	1,874
	RIGHT	138	207

13. Randolph Avenue at Imperial Highway

PM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	43	NORTHBOUND	
	THRU	33	IN ...	137
	RIGHT	59	OUT ...	112
SOUTH BOUND	LEFT	314	SOUTHBOUND	
	THRU	24	IN ...	477
	RIGHT	208	OUT ...	571
EAST BOUND	LEFT	245	EASTBOUND	
	THRU	1593	IN ...	1,982
	RIGHT	27	OUT ...	2,335
WEST BOUND	LEFT	56	WESTBOUND	
	THRU	1841	IN ...	2,490
	RIGHT	322	OUT ...	2,069

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	43	61
	THRU	33	41
	RIGHT	59	72
SOUTH BOUND	LEFT	314	350
	THRU	24	32
	RIGHT	208	230
EAST BOUND	LEFT	245	270
	THRU	1,593	1,897
	RIGHT	27	47
WEST BOUND	LEFT	56	77
	THRU	1,841	2,110
	RIGHT	322	356

14. State College Boulevard at Imperial Highway

PM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	351	NORTHBOUND	
	THRU	536	IN ...	1,432
	RIGHT	344	OUT ...	819
SOUTH BOUND	LEFT	417	SOUTHBOUND	
	THRU	275	IN ...	790
	RIGHT	93	OUT ...	1,185
EAST BOUND	LEFT	107	EASTBOUND	
	THRU	1759	IN ...	2,060
	RIGHT	91	OUT ...	2,502
WEST BOUND	LEFT	439	WESTBOUND	
	THRU	1787	IN ...	3,057
	RIGHT	465	OUT ...	2,832

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	351	385
	THRU	536	628
	RIGHT	344	471
SOUTH BOUND	LEFT	417	464
	THRU	275	331
	RIGHT	93	103
EAST BOUND	LEFT	107	118
	THRU	1,759	2,074
	RIGHT	91	118
WEST BOUND	LEFT	439	497
	THRU	1,787	2,034
	RIGHT	465	518

15. SR-57 SB Ramps at Imperial Highway

PM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	0	NORTHBOUND	
	THRU	0	IN ...	0
	RIGHT	0	OUT ...	860
SOUTH BOUND	LEFT	651	SOUTHBOUND	
	THRU	0	IN ...	1,230
	RIGHT	522	OUT ...	392
EAST BOUND	LEFT	0	EASTBOUND	
	THRU	1637	IN ...	2,851
	RIGHT	902	OUT ...	3,058
WEST BOUND	LEFT	0	WESTBOUND	
	THRU	2170	IN ...	2,792
	RIGHT	386	OUT ...	2,564

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	0	0
	THRU	0	0
	RIGHT	0	0
SOUTH BOUND	LEFT	651	721
	THRU	0	0
	RIGHT	522	624
EAST BOUND	LEFT	0	0
	THRU	1,637	1,958
	RIGHT	902	1,083
WEST BOUND	LEFT	0	0
	THRU	2,170	2,434
	RIGHT	386	438

16. SR-57 NB Ramps at Imperial Highway

PM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	886	NORTHBOUND	
	THRU	62	IN ...	1,355
	RIGHT	408	OUT ...	490
SOUTH BOUND	LEFT	0	SOUTHBOUND	
	THRU	0	IN ...	256
	RIGHT	256	OUT ...	298
EAST BOUND	LEFT	191	EASTBOUND	
	THRU	1738	IN ...	2,565
	RIGHT	360	OUT ...	3,786
WEST BOUND	LEFT	0	WESTBOUND	
	THRU	2267	IN ...	2,646
	RIGHT	45	OUT ...	2,248

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	886	1,067
	THRU	62	67
	RIGHT	408	476
SOUTH BOUND	LEFT	0	0
	THRU	0	0
	RIGHT	256	257
EAST BOUND	LEFT	191	198
	THRU	1,738	2,016
	RIGHT	360	490
WEST BOUND	LEFT	0	0
	THRU	2,267	2,607
	RIGHT	45	44

17. Associated Road at Imperial Highway

PM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	211	NORTHBOUND	
	THRU	252	IN ...	544
	RIGHT	82	OUT ...	639
SOUTH BOUND	LEFT	284	SOUTHBOUND	
	THRU	339	IN ...	776
	RIGHT	218	OUT ...	565
EAST BOUND	LEFT	247	EASTBOUND	
	THRU	1745	IN ...	2231
	RIGHT	137	OUT ...	2404
WEST BOUND	LEFT	170	WESTBOUND	
	THRU	1641	IN ...	2383
	RIGHT	166	OUT ...	2327

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	211	222
	THRU	252	275
	RIGHT	82	105
SOUTH BOUND	LEFT	284	312
	THRU	339	371
	RIGHT	218	274
EAST BOUND	LEFT	247	293
	THRU	1,745	2,028
	RIGHT	137	151
WEST BOUND	LEFT	170	213
	THRU	1,641	1,997
	RIGHT	166	201

18. Castlegate Lane/Placentia Avenue at Imperial Highway

PM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	235	NORTHBOUND	
	THRU	46	IN ...	614
	RIGHT	258	OUT ...	530
SOUTH BOUND	LEFT	24	SOUTHBOUND	
	THRU	22	IN ...	60
	RIGHT	14	OUT ...	119
EAST BOUND	LEFT	18	EASTBOUND	
	THRU	1755	IN ...	2263
	RIGHT	274	OUT ...	2461
WEST BOUND	LEFT	224	WESTBOUND	
	THRU	1806	IN ...	2433
	RIGHT	55	OUT ...	2260

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	235	286
	THRU	46	50
	RIGHT	258	282
SOUTH BOUND	LEFT	24	27
	THRU	22	24
	RIGHT	14	16
EAST BOUND	LEFT	18	20
	THRU	1,755	1,954
	RIGHT	274	300
WEST BOUND	LEFT	224	249
	THRU	1,806	2,160
	RIGHT	55	61

1. State College Boulevard at Lambert Road

PM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	128	NORTHBOUND	
	THRU	247	IN ...	787
	RIGHT	318	OUT ...	1251
SOUTH BOUND	LEFT	496	SOUTHBOUND	
	THRU	351	IN ...	820
	RIGHT	5	OUT ...	952
EAST BOUND	LEFT	18	EASTBOUND	
	THRU	970	IN ...	1094
	RIGHT	259	OUT ...	1555
WEST BOUND	LEFT	650	WESTBOUND	
	THRU	1334	IN ...	2755
	RIGHT	689	OUT ...	1641

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	128	154
	THRU	247	290
	RIGHT	318	408
SOUTH BOUND	LEFT	496	574
	THRU	351	406
	RIGHT	5	5
EAST BOUND	LEFT	18	20
	THRU	970	1,301
	RIGHT	259	290
WEST BOUND	LEFT	650	780
	THRU	1,334	1,721
	RIGHT	689	789

2. SR-57 SB Ramps at Lambert Road

PM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	0	NORTHBOUND	
	THRU	0	IN ...	0
	RIGHT	0	OUT ...	665
SOUTH BOUND	LEFT	794	SOUTHBOUND	
	THRU	0	IN ...	1854
	RIGHT	1020	OUT ...	0
EAST BOUND	LEFT	0	EASTBOUND	
	THRU	1250	IN ...	1628
	RIGHT	520	OUT ...	2755
WEST BOUND	LEFT	165	WESTBOUND	
	THRU	1654	IN ...	1890
	RIGHT	0	OUT ...	1959

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	0	0
	THRU	0	0
	RIGHT	0	0
SOUTH BOUND	LEFT	794	879
	THRU	0	0
	RIGHT	1,020	1,309
EAST BOUND	LEFT	0	0
	THRU	1,250	1,659
	RIGHT	520	609
WEST BOUND	LEFT	165	217
	THRU	1,654	1,978
	RIGHT	0	0

3. SR-57 NB Ramps at Lambert Road

PM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	1031	NORTHBOUND	
	THRU	0	IN ...	1,404
	RIGHT	421	OUT ...	0
SOUTH BOUND	LEFT	0	SOUTHBOUND	
	THRU	0	IN ...	0
	RIGHT	0	OUT ...	974
EAST BOUND	LEFT	539	EASTBOUND	
	THRU	1510	IN ...	1,964
	RIGHT	0	OUT ...	1,889
WEST BOUND	LEFT	0	WESTBOUND	
	THRU	788	IN ...	1,314
	RIGHT	399	OUT ...	1,868

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	1,031	1,159
	THRU	0	0
	RIGHT	421	500
SOUTH BOUND	LEFT	0	0
	THRU	0	0
	RIGHT	0	0
EAST BOUND	LEFT	539	752
	THRU	1,510	1,789
	RIGHT	0	0
WEST BOUND	LEFT	0	0
	THRU	788	1,035
	RIGHT	399	448

4. Randolph Avenue at Birch Street

PM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	96	NORTHBOUND	
	THRU	74	IN ...	338
	RIGHT	168	OUT ...	314
SOUTH BOUND	LEFT	54	SOUTHBOUND	
	THRU	37	IN ...	192
	RIGHT	77	OUT ...	185
EAST BOUND	LEFT	86	EASTBOUND	
	THRU	564	IN ...	815
	RIGHT	121	OUT ...	1,037
WEST BOUND	LEFT	146	WESTBOUND	
	THRU	710	IN ...	1,015
	RIGHT	25	OUT ...	849

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	96	107
	THRU	74	81
	RIGHT	168	192
SOUTH BOUND	LEFT	54	63
	THRU	37	39
	RIGHT	77	92
EAST BOUND	LEFT	86	93
	THRU	564	736
	RIGHT	121	134
WEST BOUND	LEFT	146	168
	THRU	710	891
	RIGHT	25	27

5. State College Boulevard at Birch Street

PM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	123	NORTHBOUND	
	THRU	263	IN ...	706
	RIGHT	176	OUT ...	875
SOUTH BOUND	LEFT	252	SOUTHBOUND	
	THRU	549	IN ...	1,230
	RIGHT	429	OUT ...	790
EAST BOUND	LEFT	225	EASTBOUND	
	THRU	691	IN ...	1,172
	RIGHT	162	OUT ...	1,345
WEST BOUND	LEFT	164	WESTBOUND	
	THRU	656	IN ...	1,137
	RIGHT	216	OUT ...	1,156

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	123	165
	THRU	263	340
	RIGHT	176	205
SOUTH BOUND	LEFT	252	301
	THRU	549	645
	RIGHT	429	531
EAST BOUND	LEFT	225	321
	THRU	691	822
	RIGHT	162	180
WEST BOUND	LEFT	164	180
	THRU	656	790
	RIGHT	216	270

6. S Associated Road at Birch Street

PM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	318	NORTHBOUND	
	THRU	19	IN ...	501
	RIGHT	167	OUT ...	475
SOUTH BOUND	LEFT	12	SOUTHBOUND	
	THRU	21	IN ...	46
	RIGHT	13	OUT ...	40
EAST BOUND	LEFT	8	EASTBOUND	
	THRU	705	IN ...	1,071
	RIGHT	334	OUT ...	1,078
WEST BOUND	LEFT	152	WESTBOUND	
	THRU	689	IN ...	894
	RIGHT	13	OUT ...	927

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	318	358
	THRU	19	21
	RIGHT	167	174
SOUTH BOUND	LEFT	12	13
	THRU	21	23
	RIGHT	13	17
EAST BOUND	LEFT	8	11
	THRU	705	855
	RIGHT	334	371
WEST BOUND	LEFT	152	155
	THRU	689	846
	RIGHT	13	15

7. Randolph Avenue at Madison Way

PM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	21	NORTHBOUND	
	THRU	273	IN ...	545
	RIGHT	111	OUT ...	412
SOUTH BOUND	LEFT	69	SOUTHBOUND	
	THRU	259	IN ...	365
	RIGHT	20	OUT ...	491
EAST BOUND	LEFT	34	EASTBOUND	
	THRU	11	IN ...	103
	RIGHT	58	OUT ...	45
WEST BOUND	LEFT	80	WESTBOUND	
	THRU	4	IN ...	141
	RIGHT	57	OUT ...	191

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	21	23
	THRU	273	395
	RIGHT	111	120
SOUTH BOUND	LEFT	69	76
	THRU	259	280
	RIGHT	20	25
EAST BOUND	LEFT	34	40
	THRU	11	12
	RIGHT	58	63
WEST BOUND	LEFT	80	87
	THRU	4	4
	RIGHT	57	60

8. Randolph Avenue at Brea Mall

PM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	22	NORTHBOUND	
	THRU	324	IN ...	937
	RIGHT	414	OUT ...	726
SOUTH BOUND	LEFT	41	SOUTHBOUND	
	THRU	292	IN ...	368
	RIGHT	21	OUT ...	564
EAST BOUND	LEFT	24	EASTBOUND	
	THRU	14	IN ...	64
	RIGHT	26	OUT ...	49
WEST BOUND	LEFT	380	WESTBOUND	
	THRU	6	IN ...	461
	RIGHT	75	OUT ...	469

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	22	26
	THRU	324	467
	RIGHT	414	453
SOUTH BOUND	LEFT	41	45
	THRU	292	336
	RIGHT	21	23
EAST BOUND	LEFT	24	25
	THRU	14	16
	RIGHT	26	28
WEST BOUND	LEFT	380	415
	THRU	6	6
	RIGHT	75	82

9. Brea Mall South at State College Boulevard

PM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	168	NORTHBOUND	
	THRU	24	IN ...	282
	RIGHT	90	OUT ...	134
SOUTH BOUND	LEFT	60	SOUTHBOUND	
	THRU	19	IN ...	588
	RIGHT	509	OUT ...	710
EAST BOUND	LEFT	651	EASTBOUND	
	THRU	350	IN ...	1270
	RIGHT	29	OUT ...	1276
WEST BOUND	LEFT	86	WESTBOUND	
	THRU	583	IN ...	714
	RIGHT	35	OUT ...	650

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	168	184
	THRU	24	34
	RIGHT	90	99
SOUTH BOUND	LEFT	60	65
	THRU	19	29
	RIGHT	509	555
EAST BOUND	LEFT	651	711
	THRU	350	511
	RIGHT	29	41
WEST BOUND	LEFT	86	93
	THRU	583	674
	RIGHT	35	38

10. Harbor Boulevard at Imperial Highway

PM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	343	NORTHBOUND	
	THRU	746	IN ...	2002
	RIGHT	198	OUT ...	1634
SOUTH BOUND	LEFT	210	SOUTHBOUND	
	THRU	775	IN ...	1385
	RIGHT	270	OUT ...	1390
EAST BOUND	LEFT	315	EASTBOUND	
	THRU	1105	IN ...	1778
	RIGHT	272	OUT ...	2257
WEST BOUND	LEFT	345	WESTBOUND	
	THRU	1206	IN ...	1690
	RIGHT	175	OUT ...	1537

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	343	719
	THRU	746	989
	RIGHT	198	282
SOUTH BOUND	LEFT	210	246
	THRU	775	896
	RIGHT	270	315
EAST BOUND	LEFT	315	371
	THRU	1,105	1,277
	RIGHT	272	391
WEST BOUND	LEFT	345	368
	THRU	1,206	1,380
	RIGHT	175	231

11. Puente Street at Imperial Highway

PM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	26	NORTHBOUND	
	THRU	30	IN ...	147
	RIGHT	93	OUT ...	109
SOUTH BOUND	LEFT	121	SOUTHBOUND	
	THRU	42	IN ...	297
	RIGHT	114	OUT ...	322
EAST BOUND	LEFT	69	EASTBOUND	
	THRU	1269	IN ...	1,476
	RIGHT	36	OUT ...	1,551
WEST BOUND	LEFT	77	WESTBOUND	
	THRU	1308	IN ...	1,839
	RIGHT	148	OUT ...	1,703

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	26	28
	THRU	30	33
	RIGHT	93	107
SOUTH BOUND	LEFT	121	184
	THRU	42	46
	RIGHT	114	134
EAST BOUND	LEFT	69	86
	THRU	1,269	1,413
	RIGHT	36	39
WEST BOUND	LEFT	77	84
	THRU	1,308	1,451
	RIGHT	148	242

12. Brea Boulevard at Imperial Highway

PM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	399	NORTHBOUND	
	THRU	471	IN ...	1,404
	RIGHT	260	OUT ...	1,542
SOUTH BOUND	LEFT	259	SOUTHBOUND	
	THRU	826	IN ...	1,389
	RIGHT	173	OUT ...	1,101
EAST BOUND	LEFT	176	EASTBOUND	
	THRU	1379	IN ...	1,942
	RIGHT	255	OUT ...	2,122
WEST BOUND	LEFT	333	WESTBOUND	
	THRU	1305	IN ...	2,049
	RIGHT	145	OUT ...	2,025

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	399	451
	THRU	471	664
	RIGHT	260	291
SOUTH BOUND	LEFT	259	490
	THRU	826	980
	RIGHT	173	266
EAST BOUND	LEFT	176	288
	THRU	1,379	1,446
	RIGHT	255	302
WEST BOUND	LEFT	333	369
	THRU	1,305	1,477
	RIGHT	145	435

13. Randolph Avenue at Imperial Highway

PM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	67	NORTHBOUND	
	THRU	38	IN ...	283
	RIGHT	172	OUT ...	238
SOUTH BOUND	LEFT	398	SOUTHBOUND	
	THRU	76	IN ...	448
	RIGHT	285	OUT ...	686
EAST BOUND	LEFT	307	EASTBOUND	
	THRU	1422	IN ...	1,891
	RIGHT	32	OUT ...	2,221
WEST BOUND	LEFT	109	WESTBOUND	
	THRU	1561	IN ...	2,472
	RIGHT	450	OUT ...	2,113

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	67	107
	THRU	38	49
	RIGHT	172	209
SOUTH BOUND	LEFT	398	441
	THRU	76	90
	RIGHT	285	314
EAST BOUND	LEFT	307	338
	THRU	1,422	1,672
	RIGHT	32	68
WEST BOUND	LEFT	109	151
	THRU	1,561	1,984
	RIGHT	450	497

14. State College Boulevard at Imperial Highway

PM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	265	NORTHBOUND	
	THRU	499	IN ...	1,749
	RIGHT	562	OUT ...	1,203
SOUTH BOUND	LEFT	561	SOUTHBOUND	
	THRU	376	IN ...	1,126
	RIGHT	177	OUT ...	1,946
EAST BOUND	LEFT	132	EASTBOUND	
	THRU	1491	IN ...	1,907
	RIGHT	176	OUT ...	2,570
WEST BOUND	LEFT	633	WESTBOUND	
	THRU	1763	IN ...	3,900
	RIGHT	922	OUT ...	3,022

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	265	326
	THRU	499	655
	RIGHT	562	780
SOUTH BOUND	LEFT	561	617
	THRU	376	442
	RIGHT	177	195
EAST BOUND	LEFT	132	146
	THRU	1,491	1,758
	RIGHT	176	239
WEST BOUND	LEFT	633	699
	THRU	1,763	2,178
	RIGHT	922	1,155

15. SR-57 SB Ramps at Imperial Highway

PM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	0	NORTHBOUND	
	THRU	0	IN ...	0
	RIGHT	0	OUT ...	945
SOUTH BOUND	LEFT	536	SOUTHBOUND	
	THRU	0	IN ...	1,332
	RIGHT	726	OUT ...	366
EAST BOUND	LEFT	0	EASTBOUND	
	THRU	1895	IN ...	3,349
	RIGHT	1011	OUT ...	3,733
WEST BOUND	LEFT	0	WESTBOUND	
	THRU	2455	IN ...	3,172
	RIGHT	353	OUT ...	2,770

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	0	0
	THRU	0	0
	RIGHT	0	0
SOUTH BOUND	LEFT	536	583
	THRU	0	0
	RIGHT	726	831
EAST BOUND	LEFT	0	0
	THRU	1,895	2,323
	RIGHT	1,011	1,242
WEST BOUND	LEFT	0	0
	THRU	2,455	2,848
	RIGHT	353	366

16. SR-57 NB Ramps at Imperial Highway

PM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	1261	NORTHBOUND	
	THRU	156	IN ...	1,968
	RIGHT	552	OUT ...	690
SOUTH BOUND	LEFT	0	SOUTHBOUND	
	THRU	0	IN ...	236
	RIGHT	236	OUT ...	447
EAST BOUND	LEFT	259	EASTBOUND	
	THRU	1727	IN ...	2,896
	RIGHT	554	OUT ...	3,798
WEST BOUND	LEFT	0	WESTBOUND	
	THRU	1771	IN ...	2,231
	RIGHT	32	OUT ...	2,392

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	1,261	1,568
	THRU	156	134
	RIGHT	552	636
SOUTH BOUND	LEFT	0	0
	THRU	0	0
	RIGHT	236	270
EAST BOUND	LEFT	259	281
	THRU	1,727	2,075
	RIGHT	554	690
WEST BOUND	LEFT	0	0
	THRU	1,771	2,208
	RIGHT	32	38

17. Associated Road at Imperial Highway

PM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	238	NORTHBOUND	
	THRU	181	IN ...	526
	RIGHT	109	OUT ...	607
SOUTH BOUND	LEFT	324	SOUTHBOUND	
	THRU	233	IN ...	658
	RIGHT	180	OUT ...	458
EAST BOUND	LEFT	211	EASTBOUND	
	THRU	1652	IN ...	2208
	RIGHT	239	OUT ...	2209
WEST BOUND	LEFT	144	WESTBOUND	
	THRU	1449	IN ...	2225
	RIGHT	205	OUT ...	2309

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	238	260
	THRU	181	195
	RIGHT	109	142
SOUTH BOUND	LEFT	324	321
	THRU	233	250
	RIGHT	180	203
EAST BOUND	LEFT	211	253
	THRU	1,652	1,992
	RIGHT	239	265
WEST BOUND	LEFT	144	192
	THRU	1,449	1,823
	RIGHT	205	228

18. Castlegate Lane/Placentia Avenue at Imperial Highway

PM PEAK HOUR

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** INPUT DATA *** Modified by: COMSIS Corp. (M. Roskin) 4/9/86
Modified by: FHWA 12/21/87

APPROACH	TURN MOVEMENT	BY COUNT	APPROACH	FY TOTAL
NORTH BOUND	LEFT	154	NORTHBOUND	
	THRU	17	IN ...	496
	RIGHT	231	OUT ...	493
SOUTH BOUND	LEFT	25	SOUTHBOUND	
	THRU	11	IN ...	48
	RIGHT	12	OUT ...	86
EAST BOUND	LEFT	24	EASTBOUND	
	THRU	1817	IN ...	2329
	RIGHT	272	OUT ...	2378
WEST BOUND	LEFT	200	WESTBOUND	
	THRU	1727	IN ...	2399
	RIGHT	45	OUT ...	2313

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES
NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)
*** RESULTS *** Modified by: COMSIS Corp. (M. Roskin) 2/13/86

APPROACH	TURN MOVEMENT	BY COUNT	FY FORECAST
NORTH BOUND	LEFT	154	206
	THRU	17	18
	RIGHT	231	272
SOUTH BOUND	LEFT	25	28
	THRU	11	12
	RIGHT	12	13
EAST BOUND	LEFT	24	26
	THRU	1,817	2,133
	RIGHT	272	314
WEST BOUND	LEFT	200	223
	THRU	1,727	2,159
	RIGHT	45	50

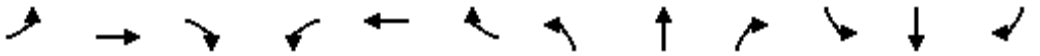
APPENDIX F

SYNCHRO QUEUING WORKSHEETS

APPENDIX F-I

YEAR 2026 TRAFFIC CONDITIONS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	1683	26	41	1790	154	37	19	68	133	21	32
Future Volume (vph)	62	1683	26	41	1790	154	37	19	68	133	21	32
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	165		0	190		310	0		0	160		0
Storage Lanes	2		0	1		1	1		0	1		0
Taper Length (ft)	90			90			90			90		
Lane Util. Factor	0.97	0.91	0.91	1.00	0.91	1.00	0.91	0.91	0.95	0.97	1.00	1.00
Frt		0.998				0.850		0.888			0.909	
Flt Protected	0.950			0.950			0.950	0.998		0.950		
Satd. Flow (prot)	3252	4808	0	1676	4818	1500	1526	2846	0	3252	1604	0
Flt Permitted	0.950			0.950			0.950	0.998		0.950		
Satd. Flow (perm)	3252	4808	0	1676	4818	1500	1526	2846	0	3252	1604	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				167		88			40	
Link Speed (mph)		45			45			30			40	
Link Distance (ft)		3572			626			275			499	
Travel Time (s)		54.1			9.5			6.3			8.5	
Peak Hour Factor	0.90	0.90	0.90	0.85	0.85	0.85	0.77	0.77	0.77	0.81	0.81	0.81
Adj. Flow (vph)	69	1870	29	48	2106	181	48	25	88	164	26	40
Shared Lane Traffic (%)							10%					
Lane Group Flow (vph)	69	1899	0	48	2106	181	43	118	0	164	66	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases						8						



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Minimum Split (s)	10.0	40.0		10.0	41.0	41.0	11.0	11.0		41.0	41.0	
Total Split (s)	11.0	58.0		10.0	57.0	57.0	11.0	11.0		41.0	41.0	
Total Split (%)	9.2%	48.3%		8.3%	47.5%	47.5%	9.2%	9.2%		34.2%	34.2%	
Maximum Green (s)	7.0	53.0		6.0	52.0	52.0	6.0	6.0		36.0	36.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lead		Lag	Lead	Lead						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max		Max	Max	
Walk Time (s)		7.0			7.0	7.0				7.0	7.0	
Flash Dont Walk (s)		28.0			29.0	29.0				29.0	29.0	
Pedestrian Calls (#/hr)		2			2	2				2	2	
Act Effct Green (s)	6.8	53.0		6.0	52.2	52.2	8.0	8.0		36.0	36.0	
Actuated g/C Ratio	0.06	0.44		0.05	0.44	0.44	0.07	0.07		0.30	0.30	
v/c Ratio	0.38	0.89		0.58	1.01	0.24	0.43	0.44		0.17	0.13	
Control Delay	34.3	8.5		50.0	23.8	0.5	69.0	23.6		25.8	12.2	
Queue Delay	0.0	0.0		0.0	1.9	0.0	0.0	0.0		0.0	0.0	
Total Delay	34.3	8.5		50.0	25.6	0.5	69.0	23.6		25.8	12.2	
LOS	C	A		D	C	A	E	C		C	B	
Approach Delay		9.4			24.2			35.8			21.9	
Approach LOS		A			C			D			C	
Queue Length 50th (ft)	29	47		40	~97	0	36	12		38	8	
Queue Length 95th (ft)	m32	m53		m46	#109	m1	#72	32		70	48	
Internal Link Dist (ft)		3492			546			195			419	
Turn Bay Length (ft)	165			190		310				160		
Base Capacity (vph)	189	2124		83	2095	746	101	271		975	509	
Starvation Cap Reductn	0	0		0	14	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.37	0.89		0.58	1.01	0.24	0.43	0.44		0.17	0.13	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.01			
Intersection Signal Delay: 18.3		Intersection LOS: B	
Intersection Capacity Utilization 55.5%		ICU Level of Service B	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.

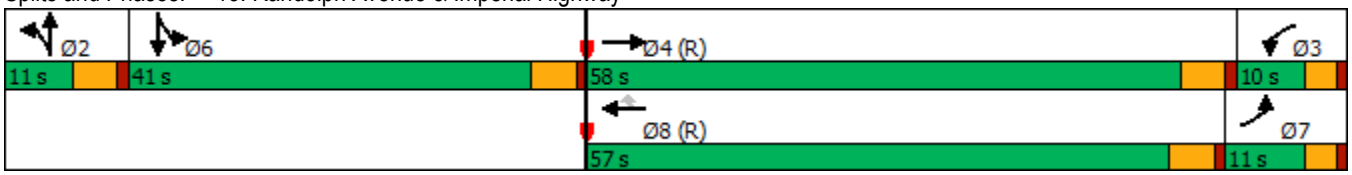
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

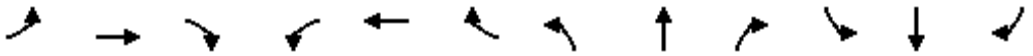
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Randolph Avenue & Imperial Highway



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	1684	194	462	1845	146	115	160	429	102	392	28
Future Volume (vph)	35	1684	194	462	1845	146	115	160	429	102	392	28
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1000	1800	1800
Storage Length (ft)	180		290	325		250	150		200	260		0
Storage Lanes	2		1	2		1	2		1	2		0
Taper Length (ft)	90			90			90			90		
Lane Util. Factor	0.97	0.86	0.86	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	0.95
Frt		0.985				0.850			0.850		0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3252	5980	0	3252	4818	1500	3252	3353	1500	1807	3319	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3252	5980	0	3252	4818	1500	3252	3353	1500	1807	3319	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24				153			370		6	
Link Speed (mph)		45			45			40			40	
Link Distance (ft)		626			521			1426			728	
Travel Time (s)		9.5			7.9			24.3			12.4	
Peak Hour Factor	0.91	0.91	0.91	0.90	0.90	0.90	0.91	0.91	0.91	0.94	0.94	0.94
Adj. Flow (vph)	38	1851	213	513	2050	162	126	176	471	109	417	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	38	2064	0	513	2050	162	126	176	471	109	447	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	2.17	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases						8			2			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Minimum Split (s)	10.0	35.0		10.0	42.0	10.0	10.0	42.0	42.0	10.0	40.0	
Total Split (s)	10.0	42.0		23.0	55.0	13.0	13.0	42.0	42.0	13.0	42.0	
Total Split (%)	8.3%	35.0%		19.2%	45.8%	10.8%	10.8%	35.0%	35.0%	10.8%	35.0%	
Maximum Green (s)	6.0	37.0		19.0	50.0	9.0	9.0	37.0	37.0	9.0	37.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	3.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0	4.0	4.0	5.0	5.0	4.0	5.0	
Lead/Lag	Lag	Lag		Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	None	None	Max	Max	None	Max	
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		23.0			30.0			30.0	30.0		28.0	
Pedestrian Calls (#/hr)		2			2			2	2		2	
Act Effct Green (s)	6.0	37.0		19.0	54.0	68.0	9.0	37.0	37.0	9.0	37.0	
Actuated g/C Ratio	0.05	0.31		0.16	0.45	0.57	0.08	0.31	0.31	0.08	0.31	
v/c Ratio	0.23	1.11		1.00	0.95	0.18	0.52	0.17	0.66	0.81	0.44	
Control Delay	37.4	76.6		77.8	42.1	5.2	61.5	30.9	12.8	78.5	14.1	
Queue Delay	0.0	0.0		0.0	7.3	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	37.4	76.6		77.8	49.4	5.2	61.5	30.9	12.8	78.5	14.1	
LOS	D	E		E	D	A	E	C	B	E	B	
Approach Delay		75.9			52.1			24.8			26.7	
Approach LOS		E			D			C			C	
Queue Length 50th (ft)	12	~509		199	~624	16	49	52	58	45	49	
Queue Length 95th (ft)	m17	#588		m#286	#722	m25	81	81	179	#98	70	
Internal Link Dist (ft)		546			441			1346			648	
Turn Bay Length (ft)	180			325		250	150		200	260		
Base Capacity (vph)	162	1860		515	2169	907	243	1033	718	135	1027	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	120	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.23	1.11		1.00	1.00	0.18	0.52	0.17	0.66	0.81	0.44	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 45 (38%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.11			
Intersection Signal Delay: 54.5		Intersection LOS: D	
Intersection Capacity Utilization 75.5%		ICU Level of Service D	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.

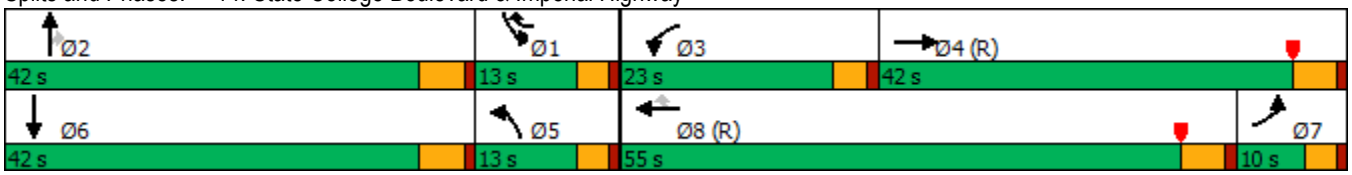
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: State College Boulevard & Imperial Highway



APPENDIX F-II

YEAR 2026 PLUS PROJECT TRAFFIC CONDITIONS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	1683	26	41	1790	172	37	19	68	185	21	69
Future Volume (vph)	104	1683	26	41	1790	172	37	19	68	185	21	69
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	165		0	190		310	0		0	160		0
Storage Lanes	2		0	1		1	1		0	1		0
Taper Length (ft)	90			90			90			90		
Lane Util. Factor	0.97	0.91	0.91	1.00	0.91	1.00	0.91	0.91	0.95	0.97	1.00	1.00
Frt		0.998				0.850		0.888			0.885	
Flt Protected	0.950			0.950			0.950	0.998		0.950		
Satd. Flow (prot)	3252	4808	0	1676	4818	1500	1526	2846	0	3252	1562	0
Flt Permitted	0.950			0.950			0.950	0.998		0.950		
Satd. Flow (perm)	3252	4808	0	1676	4818	1500	1526	2846	0	3252	1562	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				186		88			85	
Link Speed (mph)		45			45			30			40	
Link Distance (ft)		3572			626			275			499	
Travel Time (s)		54.1			9.5			6.3			8.5	
Peak Hour Factor	0.90	0.90	0.90	0.85	0.85	0.85	0.77	0.77	0.77	0.81	0.81	0.81
Adj. Flow (vph)	116	1870	29	48	2106	202	48	25	88	228	26	85
Shared Lane Traffic (%)							10%					
Lane Group Flow (vph)	116	1899	0	48	2106	202	43	118	0	228	111	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases						8						

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Minimum Split (s)	10.0	40.0		10.0	41.0	41.0	11.0	11.0		41.0	41.0	
Total Split (s)	11.0	58.0		10.0	57.0	57.0	11.0	11.0		41.0	41.0	
Total Split (%)	9.2%	48.3%		8.3%	47.5%	47.5%	9.2%	9.2%		34.2%	34.2%	
Maximum Green (s)	7.0	53.0		6.0	52.0	52.0	6.0	6.0		36.0	36.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lead		Lag	Lead	Lead						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max		Max	Max	
Walk Time (s)		7.0			7.0	7.0				7.0	7.0	
Flash Dont Walk (s)		28.0			29.0	29.0				29.0	29.0	
Pedestrian Calls (#/hr)		2			2	2				2	2	
Act Effct Green (s)	7.0	55.0		6.0	52.0	52.0	6.0	6.0		36.0	36.0	
Actuated g/C Ratio	0.06	0.46		0.05	0.43	0.43	0.05	0.05		0.30	0.30	
v/c Ratio	0.62	0.86		0.58	1.01	0.27	0.57	0.52		0.23	0.21	
Control Delay	37.9	7.9		49.7	24.6	0.6	83.4	27.0		31.9	14.9	
Queue Delay	0.0	0.0		0.0	2.1	0.0	0.0	0.0		0.0	0.0	
Total Delay	37.9	7.9		49.7	26.7	0.6	83.4	27.0		31.9	14.9	
LOS	D	A		D	C	A	F	C		C	B	
Approach Delay		9.6			25.0			42.1			26.3	
Approach LOS		A			C			D			C	
Queue Length 50th (ft)	49	54		40	~98	0	36	12		54	6	
Queue Length 95th (ft)	m52	m57		m46	#110	m1	#72	32		103	72	
Internal Link Dist (ft)		3492			546			195			419	
Turn Bay Length (ft)	165			190		310				160		
Base Capacity (vph)	189	2203		83	2087	755	76	226		975	528	
Starvation Cap Reductn	0	0		0	15	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.61	0.86		0.58	1.02	0.27	0.57	0.52		0.23	0.21	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Green	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 19.3	Intersection LOS: B
Intersection Capacity Utilization 65.4%	ICU Level of Service C
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.

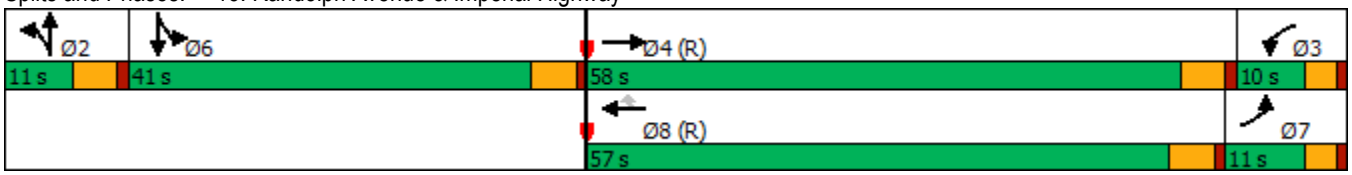
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

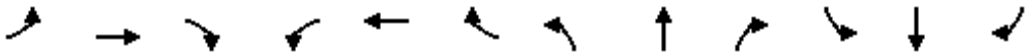
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Randolph Avenue & Imperial Highway



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	1725	204	462	1859	196	119	178	429	126	407	28
Future Volume (vph)	35	1725	204	462	1859	196	119	178	429	126	407	28
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1000	1800	1800
Storage Length (ft)	180		290	325		250	150		200	260		0
Storage Lanes	2		1	2		1	2		1	2		0
Taper Length (ft)	90			90			90			90		
Lane Util. Factor	0.97	0.86	0.86	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	0.95
Frt		0.984				0.850			0.850		0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3252	5973	0	3252	4818	1500	3252	3353	1500	1807	3319	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3252	5973	0	3252	4818	1500	3252	3353	1500	1807	3319	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25				204			361		6	
Link Speed (mph)		45			45			40			40	
Link Distance (ft)		626			521			1426			728	
Travel Time (s)		9.5			7.9			24.3			12.4	
Peak Hour Factor	0.91	0.91	0.91	0.90	0.90	0.90	0.91	0.91	0.91	0.94	0.94	0.94
Adj. Flow (vph)	38	1896	224	513	2066	218	131	196	471	134	433	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	38	2120	0	513	2066	218	131	196	471	134	463	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	2.17	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases						8			2			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Minimum Split (s)	10.0	35.0		10.0	42.0	10.0	10.0	42.0	42.0	10.0	40.0	
Total Split (s)	10.0	42.0		23.0	55.0	13.0	13.0	42.0	42.0	13.0	42.0	
Total Split (%)	8.3%	35.0%		19.2%	45.8%	10.8%	10.8%	35.0%	35.0%	10.8%	35.0%	
Maximum Green (s)	6.0	37.0		19.0	50.0	9.0	9.0	37.0	37.0	9.0	37.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	3.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0	4.0	4.0	5.0	5.0	4.0	5.0	
Lead/Lag	Lag	Lag		Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	None	None	Max	Max	None	Max	
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		23.0			30.0			30.0	30.0		28.0	
Pedestrian Calls (#/hr)		2			2			2	2		2	
Act Effct Green (s)	6.0	37.0		19.0	54.0	68.0	9.0	37.0	37.0	9.0	37.0	
Actuated g/C Ratio	0.05	0.31		0.16	0.45	0.57	0.08	0.31	0.31	0.08	0.31	
v/c Ratio	0.23	1.14		1.00	0.95	0.23	0.54	0.19	0.66	0.99	0.45	
Control Delay	38.6	91.2		77.6	42.8	5.2	62.2	31.1	13.5	118.1	16.0	
Queue Delay	0.0	0.0		0.0	8.9	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	38.6	91.2		77.6	51.7	5.2	62.2	31.1	13.5	118.1	16.0	
LOS	D	F		E	D	A	E	C	B	F	B	
Approach Delay		90.2			52.8			25.8			38.9	
Approach LOS		F			D			C			D	
Queue Length 50th (ft)	12	~537		199	~633	23	51	58	64	56	58	
Queue Length 95th (ft)	m18	#615		m#276	m#731	m34	85	89	188	#126	87	
Internal Link Dist (ft)		546			441			1346			648	
Turn Bay Length (ft)	180			325		250	150		200	260		
Base Capacity (vph)	162	1858		514	2168	938	243	1033	712	135	1027	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	120	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.23	1.14		1.00	1.01	0.23	0.54	0.19	0.66	0.99	0.45	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 45 (38%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.14			
Intersection Signal Delay: 60.8		Intersection LOS: E	
Intersection Capacity Utilization 76.7%		ICU Level of Service D	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.

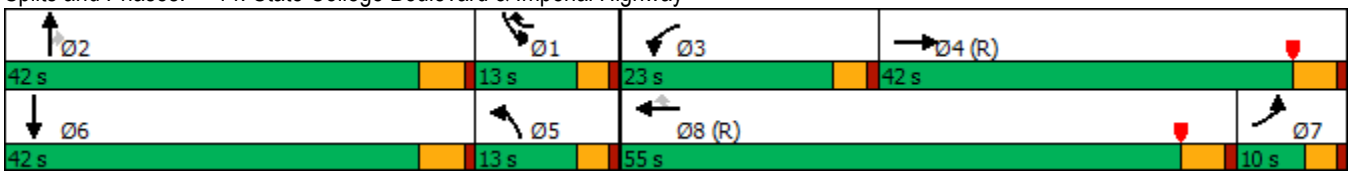
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: State College Boulevard & Imperial Highway



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	320	1807	45	73	2051	368	58	39	69	352	30	239
Future Volume (vph)	320	1807	45	73	2051	368	58	39	69	352	30	239
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	165		0	190		310	0		0	160		0
Storage Lanes	2		0	1		1	1		0	1		0
Taper Length (ft)	90			90			90			90		
Lane Util. Factor	0.97	0.91	0.91	1.00	0.91	1.00	0.91	0.91	0.95	0.97	1.00	1.00
Frt		0.996				0.850		0.909			0.867	
Flt Protected	0.950			0.950			0.950	0.997		0.950		
Satd. Flow (prot)	3252	4798	0	1676	4818	1500	1526	2911	0	3252	1530	0
Flt Permitted	0.950			0.950			0.950	0.997		0.950		
Satd. Flow (perm)	3252	4798	0	1676	4818	1500	1526	2911	0	3252	1530	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				328		78			145	
Link Speed (mph)		45			45			30			40	
Link Distance (ft)		3572			626			275			499	
Travel Time (s)		54.1			9.5			6.3			8.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.89	0.89	0.89	0.88	0.88	0.88
Adj. Flow (vph)	337	1902	47	77	2159	387	65	44	78	400	34	272
Shared Lane Traffic (%)							10%					
Lane Group Flow (vph)	337	1949	0	77	2159	387	58	129	0	400	306	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases						8						

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Minimum Split (s)	10.0	40.0		10.0	41.0	41.0	11.0	11.0		41.0	41.0	
Total Split (s)	15.0	57.0		11.0	53.0	53.0	11.0	11.0		41.0	41.0	
Total Split (%)	12.5%	47.5%		9.2%	44.2%	44.2%	9.2%	9.2%		34.2%	34.2%	
Maximum Green (s)	11.0	52.0		7.0	48.0	48.0	6.0	6.0		36.0	36.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lead		Lag	Lead	Lead						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max		Max	Max	
Walk Time (s)		7.0			7.0	7.0				7.0	7.0	
Flash Dont Walk (s)		28.0			29.0	29.0				29.0	29.0	
Pedestrian Calls (#/hr)		2			2	2				2	2	
Act Effct Green (s)	11.0	52.0		7.0	48.0	48.0	6.0	6.0		36.0	36.0	
Actuated g/C Ratio	0.09	0.43		0.06	0.40	0.40	0.05	0.05		0.30	0.30	
v/c Ratio	1.13	0.94		0.79	1.12	0.49	0.76	0.59		0.41	0.55	
Control Delay	107.2	10.1		42.6	75.1	1.8	108.5	35.8		33.3	23.7	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	107.2	10.1		42.6	75.1	1.8	108.5	35.8		33.3	23.7	
LOS	F	B		D	E	A	F	D		C	C	
Approach Delay		24.4			63.3			58.3			29.1	
Approach LOS		C			E			E			C	
Queue Length 50th (ft)	~160	125		63	~682	18	49	21		111	81	
Queue Length 95th (ft)	m#162	m123		m57	m219	m14	#132	54		218	261	
Internal Link Dist (ft)		3492			546			195			419	
Turn Bay Length (ft)	165			190		310				160		
Base Capacity (vph)	298	2081		97	1927	796	76	219		975	560	
Starvation Cap Reductn	0	0		0	7	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	1.13	0.94		0.79	1.12	0.49	0.76	0.59		0.41	0.55	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 68 (57%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.13			
Intersection Signal Delay: 43.7		Intersection LOS: D	
Intersection Capacity Utilization 89.5%		ICU Level of Service E	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.

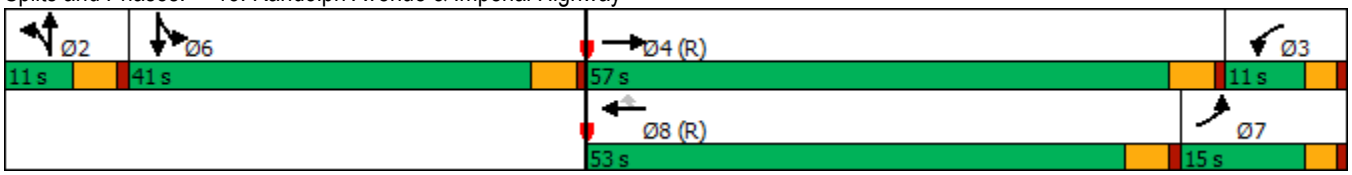
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

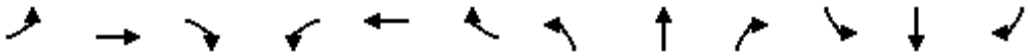
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Randolph Avenue & Imperial Highway



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	1991	116	474	2019	574	391	625	370	463	323	98
Future Volume (vph)	112	1991	116	474	2019	574	391	625	370	463	323	98
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1000	1800	1800
Storage Length (ft)	180		290	325		250	150		200	260		0
Storage Lanes	2		1	2		1	2		1	2		0
Taper Length (ft)	90			90			90			90		
Lane Util. Factor	0.97	0.86	0.86	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	0.95
Frt		0.992				0.850			0.850		0.965	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3252	6022	0	3252	4818	1500	3252	3353	1500	1807	3236	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3252	6022	0	3252	4818	1500	3252	3353	1500	1807	3236	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10				109			201		34	
Link Speed (mph)		45			45			40			40	
Link Distance (ft)		626			521			1426			728	
Travel Time (s)		9.5			7.9			24.3			12.4	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	117	2074	121	494	2103	598	434	694	411	514	359	109
Shared Lane Traffic (%)												
Lane Group Flow (vph)	117	2195	0	494	2103	598	434	694	411	514	468	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	2.17	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases						8			2			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Minimum Split (s)	10.0	35.0		10.0	42.0	10.0	10.0	42.0	42.0	10.0	40.0	
Total Split (s)	10.0	44.0		15.0	49.0	19.0	21.0	42.0	42.0	19.0	40.0	
Total Split (%)	8.3%	36.7%		12.5%	40.8%	15.8%	17.5%	35.0%	35.0%	15.8%	33.3%	
Maximum Green (s)	6.0	39.0		11.0	44.0	15.0	17.0	37.0	37.0	15.0	35.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	3.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0	4.0	4.0	5.0	5.0	4.0	5.0	
Lead/Lag	Lag	Lag		Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	None	None	Max	Max	None	Max	
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		23.0			30.0			30.0	30.0		28.0	
Pedestrian Calls (#/hr)		2			2			2	2		2	
Act Effct Green (s)	6.0	39.0		11.0	44.0	60.0	17.0	37.0	37.0	15.0	35.0	
Actuated g/C Ratio	0.05	0.32		0.09	0.37	0.50	0.14	0.31	0.31	0.12	0.29	
v/c Ratio	0.72	1.12		1.66	1.19	0.74	0.94	0.67	0.68	2.28	0.48	
Control Delay	50.1	78.7		334.4	123.6	13.0	81.3	40.1	24.6	611.6	31.9	
Queue Delay	0.0	0.0		0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	50.1	78.7		334.4	124.3	13.0	81.3	40.1	24.6	611.6	31.9	
LOS	D	E		F	F	B	F	D	C	F	C	
Approach Delay		77.2			135.9			47.5			335.3	
Approach LOS		E			F			D			F	
Queue Length 50th (ft)	44	~556		~285	~730	208	173	246	144	~342	176	
Queue Length 95th (ft)	m52	m#625		m#296	m#752	m236	#273	314	265	#451	235	
Internal Link Dist (ft)		546			441			1346			648	
Turn Bay Length (ft)	180			325		250	150		200	260		
Base Capacity (vph)	162	1963		298	1766	804	460	1033	601	225	967	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	325	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.72	1.12		1.66	1.46	0.74	0.94	0.67	0.68	2.28	0.48	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 116 (97%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.28			
Intersection Signal Delay: 126.5		Intersection LOS: F	
Intersection Capacity Utilization 105.1%		ICU Level of Service G	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.

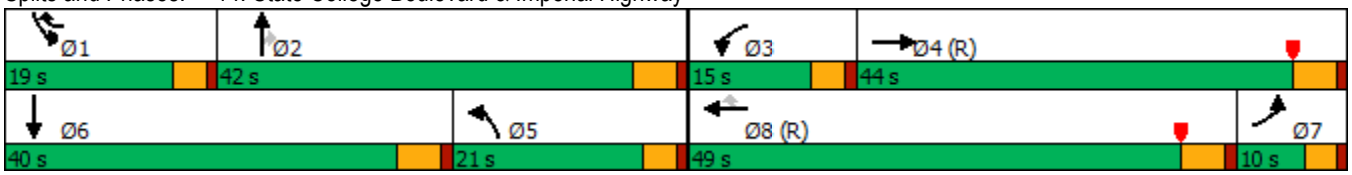
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

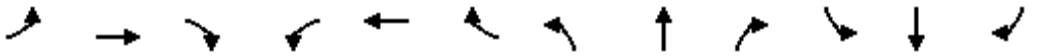
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: State College Boulevard & Imperial Highway



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	344	1626	65	142	1880	496	102	47	199	446	86	352
Future Volume (vph)	344	1626	65	142	1880	496	102	47	199	446	86	352
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	165		0	190		310	0		0	160		0
Storage Lanes	2		0	1		1	1		0	1		0
Taper Length (ft)	90			90			90			90		
Lane Util. Factor	0.97	0.91	0.91	1.00	0.91	1.00	0.91	0.91	0.95	0.97	1.00	1.00
Frt		0.994				0.850		0.883			0.880	
Flt Protected	0.950			0.950			0.950	0.998		0.950		
Satd. Flow (prot)	3252	4789	0	1676	4818	1500	1526	2830	0	3252	1553	0
Flt Permitted	0.950			0.950			0.950	0.998		0.950		
Satd. Flow (perm)	3252	4789	0	1676	4818	1500	1526	2830	0	3252	1553	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6				463		180			175	
Link Speed (mph)		45			45			30			40	
Link Distance (ft)		3572			626			275			499	
Travel Time (s)		54.1			9.5			6.3			8.5	
Peak Hour Factor	0.94	0.94	0.94	0.98	0.98	0.98	0.83	0.83	0.83	0.90	0.90	0.90
Adj. Flow (vph)	366	1730	69	145	1918	506	123	57	240	496	96	391
Shared Lane Traffic (%)							10%					
Lane Group Flow (vph)	366	1799	0	145	1918	506	111	309	0	496	487	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases						8						



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Minimum Split (s)	10.0	40.0		10.0	41.0	41.0	11.0	11.0		41.0	41.0	
Total Split (s)	17.0	52.0		15.0	50.0	50.0	12.0	12.0		41.0	41.0	
Total Split (%)	14.2%	43.3%		12.5%	41.7%	41.7%	10.0%	10.0%		34.2%	34.2%	
Maximum Green (s)	13.0	47.0		11.0	45.0	45.0	7.0	7.0		36.0	36.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lead		Lag	Lead	Lead						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max		Max	Max	
Walk Time (s)		7.0			7.0	7.0				7.0	7.0	
Flash Dont Walk (s)		28.0			29.0	29.0				29.0	29.0	
Pedestrian Calls (#/hr)		2			2	2				2	2	
Act Effct Green (s)	13.0	47.0		11.0	45.0	45.0	7.0	7.0		36.0	36.0	
Actuated g/C Ratio	0.11	0.39		0.09	0.38	0.38	0.06	0.06		0.30	0.30	
v/c Ratio	1.04	0.96		0.95	1.06	0.59	1.25	0.95dr		0.51	0.83	
Control Delay	67.8	11.7		56.9	41.7	0.5	221.8	57.1		36.9	38.0	
Queue Delay	0.0	0.0		0.0	0.0	1.0	0.0	0.0		0.0	0.0	
Total Delay	67.8	11.7		56.9	41.7	1.5	221.8	57.1		36.9	38.0	
LOS	E	B		E	D	A	F	E		D	D	
Approach Delay		21.2			34.6			100.7			37.5	
Approach LOS		C			C			F			D	
Queue Length 50th (ft)	~162	172		120	~576	5	~117	54		163	236	
Queue Length 95th (ft)	m#153	m164		m106	m99	m0	#224	#118		217	#419	
Internal Link Dist (ft)		3492			546			195			419	
Turn Bay Length (ft)	165			190		310				160		
Base Capacity (vph)	352	1879		153	1806	851	89	334		975	588	
Starvation Cap Reductn	0	0		0	0	148	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	1.04	0.96		0.95	1.06	0.72	1.25	0.93		0.51	0.83	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 114 (95%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.25			
Intersection Signal Delay: 34.9		Intersection LOS: C	
Intersection Capacity Utilization 99.7%		ICU Level of Service F	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

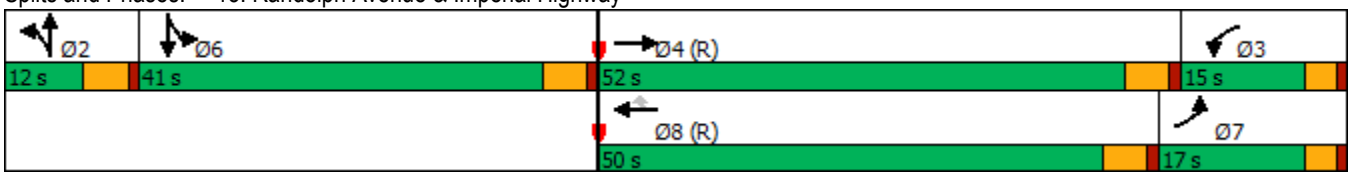
\# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 13: Randolph Avenue & Imperial Highway



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	139	1695	233	684	2092	991	331	564	607	655	443	186
Future Volume (vph)	139	1695	233	684	2092	991	331	564	607	655	443	186
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1000	1800	1800
Storage Length (ft)	180		290	325		250	150		200	260		0
Storage Lanes	2		1	2		1	2		1	2		0
Taper Length (ft)	90			90			90			90		
Lane Util. Factor	0.97	0.86	0.86	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	0.95
Frt		0.982				0.850			0.850		0.956	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3252	5961	0	3252	4818	1500	3252	3353	1500	1807	3205	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3252	5961	0	3252	4818	1500	3252	3353	1500	1807	3205	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		30				93			207		54	
Link Speed (mph)		45			45			40			40	
Link Distance (ft)		626			521			1426			728	
Travel Time (s)		9.5			7.9			24.3			12.4	
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.98	0.98	0.98	0.83	0.83	0.83
Adj. Flow (vph)	149	1823	251	743	2274	1077	338	576	619	789	534	224
Shared Lane Traffic (%)												
Lane Group Flow (vph)	149	2074	0	743	2274	1077	338	576	619	789	758	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	2.17	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases						8			2			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Minimum Split (s)	10.0	35.0		10.0	42.0	10.0	10.0	42.0	42.0	10.0	40.0	
Total Split (s)	10.0	43.0		15.0	48.0	18.0	22.0	44.0	44.0	18.0	40.0	
Total Split (%)	8.3%	35.8%		12.5%	40.0%	15.0%	18.3%	36.7%	36.7%	15.0%	33.3%	
Maximum Green (s)	6.0	38.0		11.0	43.0	14.0	18.0	39.0	39.0	14.0	35.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	3.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0	4.0	4.0	5.0	5.0	4.0	5.0	
Lead/Lag	Lag	Lag		Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	None	None	Max	Max	None	Max	
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		23.0			30.0			30.0	30.0		28.0	
Pedestrian Calls (#/hr)		2			2			2	2		2	
Act Effct Green (s)	6.0	38.0		11.0	43.0	62.0	18.0	39.0	39.0	14.0	35.0	
Actuated g/C Ratio	0.05	0.32		0.09	0.36	0.52	0.15	0.32	0.32	0.12	0.29	
v/c Ratio	0.92	1.09		2.49	1.32	1.32	0.69	0.53	0.99	3.76	0.78	
Control Delay	76.5	70.6		699.0	177.6	170.1	56.7	35.2	60.4	1267.8	42.6	
Queue Delay	0.0	0.0		0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	76.5	70.6		699.0	177.9	170.1	56.7	35.2	60.4	1267.8	42.6	
LOS	E	E		F	F	F	E	D	E	F	D	
Approach Delay		71.0			270.4			50.1			667.5	
Approach LOS		E			F			D			F	
Queue Length 50th (ft)	56	~506		~507	~832	~1038	129	191	351	~568	264	
Queue Length 95th (ft)	m#73	m#560		m#460	m#709	m#895	181	248	#605	#630	303	
Internal Link Dist (ft)		546			441			1346			648	
Turn Bay Length (ft)	180			325		250	150		200	260		
Base Capacity (vph)	162	1908		298	1726	819	487	1089	627	210	973	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	149	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.92	1.09		2.49	1.44	1.32	0.69	0.53	0.99	3.76	0.78	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 30 (25%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 3.76			
Intersection Signal Delay: 252.7		Intersection LOS: F	
Intersection Capacity Utilization 117.6%		ICU Level of Service H	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.

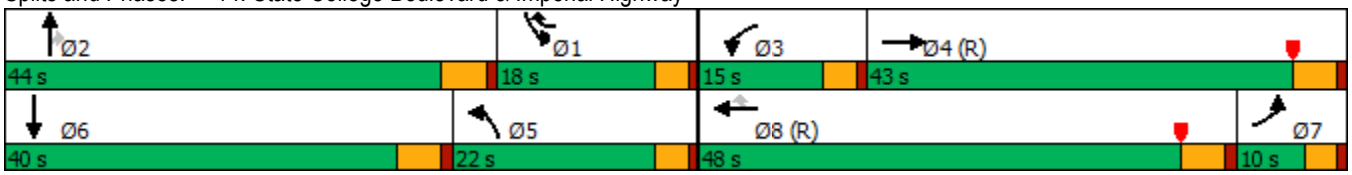
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: State College Boulevard & Imperial Highway



APPENDIX F-III

YEAR 2026 PLUS PROJECT WITH IMPROVEMENTS TRAFFIC CONDITIONS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	1725	204	462	1859	196	119	178	429	126	407	28
Future Volume (vph)	35	1725	204	462	1859	196	119	178	429	126	407	28
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	180		290	325		250	150		200	260		275
Storage Lanes	2		1	2		1	2		1	1		1
Taper Length (ft)	90			90			90			90		
Lane Util. Factor	0.97	0.86	0.86	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt		0.984				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3252	5973	0	3252	4818	1500	3252	3353	1500	3252	3353	1500
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3252	5973	0	3252	4818	1500	3252	3353	1500	3252	3353	1500
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25				204			361			136
Link Speed (mph)		45			45			40			40	
Link Distance (ft)		626			521			1426			728	
Travel Time (s)		9.5			7.9			24.3			12.4	
Peak Hour Factor	0.91	0.91	0.91	0.90	0.90	0.90	0.91	0.91	0.91	0.94	0.94	0.94
Adj. Flow (vph)	38	1896	224	513	2066	218	131	196	471	134	433	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	38	2120	0	513	2066	218	131	196	471	134	433	30
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			36			36	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases						8			2			6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	1	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.0	35.0		10.0	42.0	10.0	10.0	42.0	42.0	10.0	40.0	40.0
Total Split (s)	10.0	42.0		23.0	55.0	13.0	13.0	42.0	42.0	13.0	42.0	42.0
Total Split (%)	8.3%	35.0%		19.2%	45.8%	10.8%	10.8%	35.0%	35.0%	10.8%	35.0%	35.0%
Maximum Green (s)	6.0	37.0		19.0	50.0	9.0	9.0	37.0	37.0	9.0	37.0	37.0
Yellow Time (s)	3.0	4.0		3.0	4.0	3.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0		4.0	5.0	4.0	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lag	Lag		Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max	None	None	Max	Max	None	Max	Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		23.0			30.0			30.0	30.0		28.0	28.0
Pedestrian Calls (#/hr)		2			2			2	2		2	2
Act Effct Green (s)	6.0	37.0		19.3	54.3	68.0	8.7	37.0	37.0	8.7	37.0	37.0
Actuated g/C Ratio	0.05	0.31		0.16	0.45	0.57	0.07	0.31	0.31	0.07	0.31	0.31
v/c Ratio	0.23	1.14		0.98	0.95	0.23	0.56	0.19	0.66	0.57	0.42	0.05
Control Delay	38.6	91.2		73.4	42.0	5.2	63.3	31.1	13.5	49.1	16.2	0.2
Queue Delay	0.0	0.0		0.0	7.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.6	91.2		73.4	49.6	5.2	63.3	31.1	13.5	49.1	16.2	0.2
LOS	D	F		E	D	A	E	C	B	D	B	A
Approach Delay		90.2			50.5			26.0			22.8	
Approach LOS		F			D			C			C	
Queue Length 50th (ft)	12	~537		199	~633	23	51	58	64	55	56	0
Queue Length 95th (ft)	m18	#615		m#276	m#731	m34	85	89	188	91	84	1
Internal Link Dist (ft)		546			441			1346			648	
Turn Bay Length (ft)	180			325		250	150		200	260		275
Base Capacity (vph)	162	1858		523	2181	933	243	1033	712	243	1033	556
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	120	0	0	0	0	0	0	2
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	1.14		0.98	1.00	0.23	0.54	0.19	0.66	0.55	0.42	0.05

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 45 (38%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.14			
Intersection Signal Delay: 58.3		Intersection LOS: E	
Intersection Capacity Utilization 75.8%		ICU Level of Service D	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.

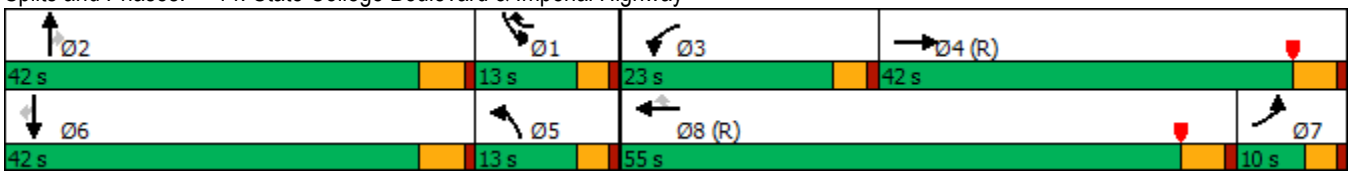
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: State College Boulevard & Imperial Highway



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	1991	116	474	2019	574	391	625	370	463	323	98
Future Volume (vph)	112	1991	116	474	2019	574	391	625	370	463	323	98
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	180		290	325		250	150		200	260		275
Storage Lanes	2		1	2		1	2		1	1		1
Taper Length (ft)	90			90			90			90		
Lane Util. Factor	0.97	0.86	0.86	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt		0.992				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3252	6022	0	3252	4818	1500	3252	3353	1500	3252	3353	1500
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3252	6022	0	3252	4818	1500	3252	3353	1500	3252	3353	1500
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10				109			201			145
Link Speed (mph)		45			45			40			40	
Link Distance (ft)		626			521			1426			728	
Travel Time (s)		9.5			7.9			24.3			12.4	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	117	2074	121	494	2103	598	434	694	411	514	359	109
Shared Lane Traffic (%)												
Lane Group Flow (vph)	117	2195	0	494	2103	598	434	694	411	514	359	109
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			36			36	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases						8			2			6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	1	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.0	35.0		10.0	42.0	10.0	10.0	42.0	42.0	10.0	40.0	40.0
Total Split (s)	10.0	44.0		15.0	49.0	19.0	21.0	42.0	42.0	19.0	40.0	40.0
Total Split (%)	8.3%	36.7%		12.5%	40.8%	15.8%	17.5%	35.0%	35.0%	15.8%	33.3%	33.3%
Maximum Green (s)	6.0	39.0		11.0	44.0	15.0	17.0	37.0	37.0	15.0	35.0	35.0
Yellow Time (s)	3.0	4.0		3.0	4.0	3.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0		4.0	5.0	4.0	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lag	Lag		Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max	None	None	Max	Max	None	Max	Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		23.0			30.0			30.0	30.0		28.0	28.0
Pedestrian Calls (#/hr)		2			2			2	2		2	2
Act Effct Green (s)	6.0	39.0		11.0	44.0	60.0	17.0	37.0	37.0	15.0	35.0	35.0
Actuated g/C Ratio	0.05	0.32		0.09	0.37	0.50	0.14	0.31	0.31	0.12	0.29	0.29
v/c Ratio	0.72	1.12		1.66	1.19	0.74	0.94	0.67	0.68	1.27	0.37	0.20
Control Delay	50.1	78.7		334.4	123.6	13.0	81.3	40.1	24.6	169.7	32.5	6.1
Queue Delay	0.0	0.0		0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.1	78.7		334.4	124.2	13.0	81.3	40.1	24.6	169.7	32.5	6.1
LOS	D	E		F	F	B	F	D	C	F	C	A
Approach Delay		77.2			135.9			47.5			101.4	
Approach LOS		E			F			D			F	
Queue Length 50th (ft)	44	~556		~285	~730	208	173	246	144	~264	130	16
Queue Length 95th (ft)	m52	m#625		m#296	m#752	m236	#273	314	265	#373	186	m35
Internal Link Dist (ft)		546			441			1346			648	
Turn Bay Length (ft)	180			325		250	150		200	260		275
Base Capacity (vph)	162	1963		298	1766	804	460	1033	601	406	977	540
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	320	0	0	0	0	0	0	9
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	1.12		1.66	1.45	0.74	0.94	0.67	0.68	1.27	0.37	0.21

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 116 (97%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.66			
Intersection Signal Delay: 97.8		Intersection LOS: F	
Intersection Capacity Utilization 93.9%		ICU Level of Service F	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.

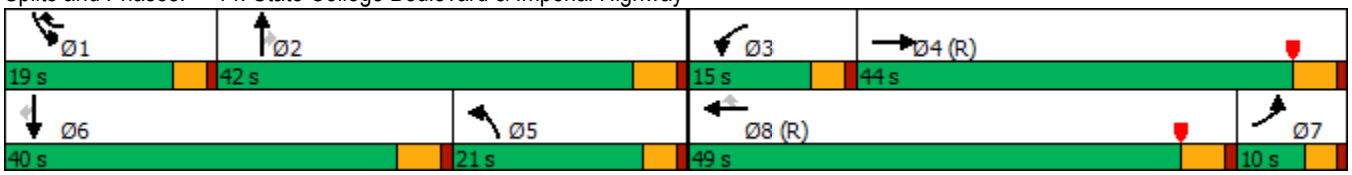
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

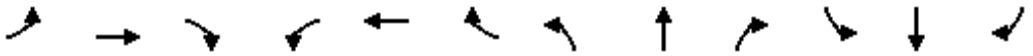
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: State College Boulevard & Imperial Highway



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	139	1695	233	684	2092	991	331	564	607	655	443	186
Future Volume (vph)	139	1695	233	684	2092	991	331	564	607	655	443	186
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	180		290	325		250	150		200	260		275
Storage Lanes	2		1	2		1	2		1	1		1
Taper Length (ft)	90			90			90			90		
Lane Util. Factor	0.97	0.86	0.86	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt		0.982				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3252	5961	0	3252	4818	1500	3252	3353	1500	3252	3353	1500
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3252	5961	0	3252	4818	1500	3252	3353	1500	3252	3353	1500
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		30				93			207			136
Link Speed (mph)		45			45			40			40	
Link Distance (ft)		626			521			1426			728	
Travel Time (s)		9.5			7.9			24.3			12.4	
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.98	0.98	0.98	0.83	0.83	0.83
Adj. Flow (vph)	149	1823	251	743	2274	1077	338	576	619	789	534	224
Shared Lane Traffic (%)												
Lane Group Flow (vph)	149	2074	0	743	2274	1077	338	576	619	789	534	224
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			36			36	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases						8			2			6



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	1	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.0	35.0		10.0	42.0	10.0	10.0	42.0	42.0	10.0	40.0	40.0
Total Split (s)	10.0	43.0		15.0	48.0	18.0	22.0	44.0	44.0	18.0	40.0	40.0
Total Split (%)	8.3%	35.8%		12.5%	40.0%	15.0%	18.3%	36.7%	36.7%	15.0%	33.3%	33.3%
Maximum Green (s)	6.0	38.0		11.0	43.0	14.0	18.0	39.0	39.0	14.0	35.0	35.0
Yellow Time (s)	3.0	4.0		3.0	4.0	3.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0		4.0	5.0	4.0	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lag	Lag		Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max	None	None	Max	Max	None	Max	Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		23.0			30.0			30.0	30.0		28.0	28.0
Pedestrian Calls (#/hr)		2			2			2	2		2	2
Act Effct Green (s)	6.0	38.0		11.0	43.0	62.0	18.0	39.0	39.0	14.0	35.0	35.0
Actuated g/C Ratio	0.05	0.32		0.09	0.36	0.52	0.15	0.32	0.32	0.12	0.29	0.29
v/c Ratio	0.92	1.09		2.49	1.32	1.32	0.69	0.53	0.99	2.08	0.55	0.42
Control Delay	76.5	70.6		699.0	177.6	170.1	56.7	35.2	60.4	523.0	38.3	16.1
Queue Delay	0.0	0.0		0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.5	70.6		699.0	177.9	170.1	56.7	35.2	60.4	523.0	38.3	16.2
LOS	E	E		F	F	F	E	D	E	F	D	B
Approach Delay		71.0			270.4			50.1			282.3	
Approach LOS		E			F			D			F	
Queue Length 50th (ft)	56	~506		~507	~832	~1038	129	191	351	~497	183	51
Queue Length 95th (ft)	m#73	m#560		m#460	m#709	m#895	181	248	#605	#560	217	104
Internal Link Dist (ft)		546			441			1346			648	
Turn Bay Length (ft)	180			325		250	150		200	260		275
Base Capacity (vph)	162	1908		298	1726	819	487	1089	627	379	977	533
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	148	0	0	0	0	0	0	5
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.92	1.09		2.49	1.44	1.32	0.69	0.53	0.99	2.08	0.55	0.42

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 30 (25%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.49			
Intersection Signal Delay: 189.3		Intersection LOS: F	
Intersection Capacity Utilization 101.8%		ICU Level of Service G	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.

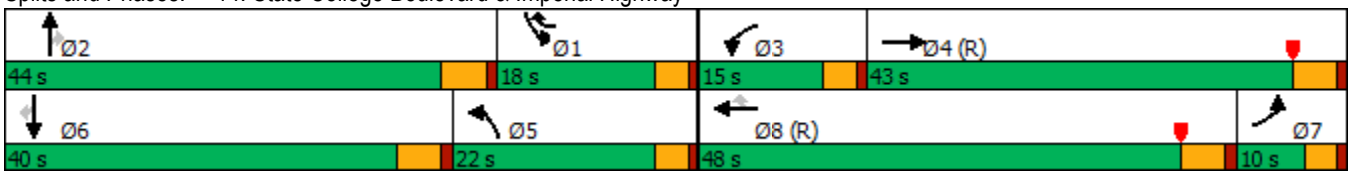
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

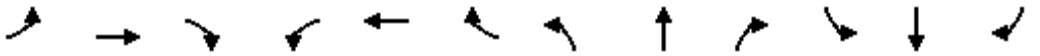
Splits and Phases: 14: State College Boulevard & Imperial Highway



APPENDIX F-IV

YEAR 2045 TRAFFIC CONDITIONS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	96	1742	27	43	1882	164	39	20	71	140	22	41
Future Volume (vph)	96	1742	27	43	1882	164	39	20	71	140	22	41
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	165		0	190		310	0		0	160		0
Storage Lanes	2		0	1		1	1		0	1		0
Taper Length (ft)	90			90			90			90		
Lane Util. Factor	0.97	0.91	0.91	1.00	0.91	1.00	0.91	0.91	0.95	0.97	1.00	1.00
Frt		0.998				0.850		0.888			0.902	
Flt Protected	0.950			0.950			0.950	0.998		0.950		
Satd. Flow (prot)	3252	4808	0	1676	4818	1500	1526	2846	0	3252	1592	0
Flt Permitted	0.950			0.950			0.950	0.998		0.950		
Satd. Flow (perm)	3252	4808	0	1676	4818	1500	1526	2846	0	3252	1592	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				164		71			41	
Link Speed (mph)		45			45			30			40	
Link Distance (ft)		3572			626			275			499	
Travel Time (s)		54.1			9.5			6.3			8.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	96	1742	27	43	1882	164	39	20	71	140	22	41
Shared Lane Traffic (%)							10%					
Lane Group Flow (vph)	96	1769	0	43	1882	164	35	95	0	140	63	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases						8						



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Minimum Split (s)	10.0	40.0		10.0	41.0	41.0	11.0	11.0		41.0	41.0	
Total Split (s)	11.0	58.0		10.0	57.0	57.0	11.0	11.0		41.0	41.0	
Total Split (%)	9.2%	48.3%		8.3%	47.5%	47.5%	9.2%	9.2%		34.2%	34.2%	
Maximum Green (s)	7.0	53.0		6.0	52.0	52.0	6.0	6.0		36.0	36.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lead		Lag	Lead	Lead						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max		Max	Max	
Walk Time (s)		7.0			7.0	7.0				7.0	7.0	
Flash Dont Walk (s)		28.0			29.0	29.0				29.0	29.0	
Pedestrian Calls (#/hr)		2			2	2				2	2	
Act Effct Green (s)	6.9	54.9		6.0	52.0	52.0	6.1	6.1		36.0	36.0	
Actuated g/C Ratio	0.06	0.46		0.05	0.43	0.43	0.05	0.05		0.30	0.30	
v/c Ratio	0.52	0.80		0.52	0.90	0.22	0.45	0.45		0.14	0.12	
Control Delay	36.5	5.7		87.9	43.9	11.6	74.1	26.4		22.7	10.0	
Queue Delay	0.0	0.0		0.0	7.3	0.0	0.0	0.0		0.0	0.0	
Total Delay	36.5	5.7		87.9	51.2	11.6	74.1	26.4		22.7	10.0	
LOS	D	A		F	D	B	E	C		C	A	
Approach Delay		7.2			48.8			39.2			18.8	
Approach LOS		A			D			D			B	
Queue Length 50th (ft)	41	42		36	573	60	29	9		32	6	
Queue Length 95th (ft)	m45	m48		m42	622	m76	#72	40		66	52	
Internal Link Dist (ft)		3492			546			195			419	
Turn Bay Length (ft)	165			190		310				160		
Base Capacity (vph)	189	2199		83	2087	742	77	212		975	506	
Starvation Cap Reductn	0	0		0	189	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.51	0.80		0.52	0.99	0.22	0.45	0.45		0.14	0.12	

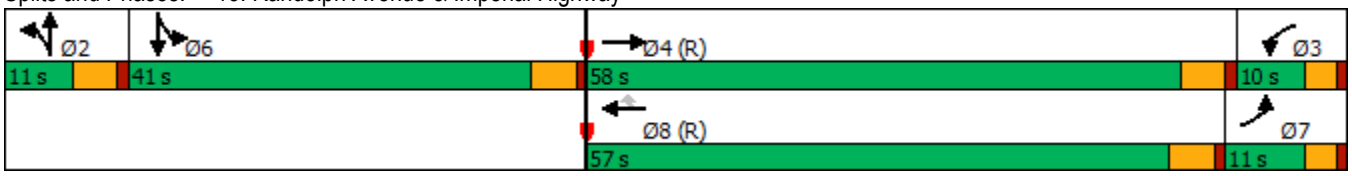
Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 29.0		Intersection LOS: C	
Intersection Capacity Utilization 62.6%		ICU Level of Service B	
Analysis Period (min) 15			

95th percentile volume exceeds capacity, queue may be longer.

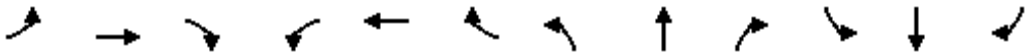
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Randolph Avenue & Imperial Highway



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	1734	204	534	1939	153	121	168	479	127	487	33
Future Volume (vph)	37	1734	204	534	1939	153	121	168	479	127	487	33
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1000	1800	1800
Storage Length (ft)	180		290	325		250	150		200	260		0
Storage Lanes	2		1	2		1	2		1	2		0
Taper Length (ft)	90			90			90			90		
Lane Util. Factor	0.97	0.86	0.86	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	0.95
Frt		0.984				0.850			0.850		0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3252	5973	0	3252	4818	1500	3252	3353	1500	1807	3319	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3252	5973	0	3252	4818	1500	3252	3353	1500	1807	3319	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25				152			363		6	
Link Speed (mph)		45			45			40			40	
Link Distance (ft)		626			521			1426			728	
Travel Time (s)		9.5			7.9			24.3			12.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	37	1734	204	534	1939	153	121	168	479	127	487	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	1938	0	534	1939	153	121	168	479	127	520	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	2.17	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases						8			2			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Minimum Split (s)	10.0	35.0		10.0	42.0	10.0	10.0	42.0	42.0	10.0	40.0	
Total Split (s)	10.0	42.0		23.0	55.0	13.0	13.0	42.0	42.0	13.0	42.0	
Total Split (%)	8.3%	35.0%		19.2%	45.8%	10.8%	10.8%	35.0%	35.0%	10.8%	35.0%	
Maximum Green (s)	6.0	37.0		19.0	50.0	9.0	9.0	37.0	37.0	9.0	37.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	3.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0	4.0	4.0	5.0	5.0	4.0	5.0	
Lead/Lag	Lag	Lag		Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	None	None	Max	Max	None	Max	
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		23.0			30.0			30.0	30.0		28.0	
Pedestrian Calls (#/hr)		2			2			2	2		2	
Act Effct Green (s)	6.0	37.0		19.0	54.0	68.0	9.0	37.0	37.0	9.0	37.0	
Actuated g/C Ratio	0.05	0.31		0.16	0.45	0.57	0.08	0.31	0.31	0.08	0.31	
v/c Ratio	0.23	1.04		1.04	0.89	0.17	0.50	0.16	0.67	0.94	0.51	
Control Delay	82.6	92.7		86.1	37.5	4.2	60.8	30.8	14.0	148.4	59.0	
Queue Delay	0.0	0.0		0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.2	
Total Delay	82.6	92.7		86.1	38.7	4.2	60.8	30.8	14.0	148.4	59.2	
LOS	F	F		F	D	A	E	C	B	F	E	
Approach Delay		92.5			46.3			25.0			76.7	
Approach LOS		F			D			C			E	
Queue Length 50th (ft)	14	~480		~237	528	12	47	50	69	53	216	
Queue Length 95th (ft)	m21	#559		m#303	#638	m15	79	78	195	#118	275	
Internal Link Dist (ft)		546			441			1346			648	
Turn Bay Length (ft)	180			325		250	150		200	260		
Base Capacity (vph)	162	1858		514	2168	915	243	1033	713	135	1027	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	86	0	0	0	0	0	104	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.23	1.04		1.04	0.93	0.17	0.50	0.16	0.67	0.94	0.56	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.04			
Intersection Signal Delay: 62.0		Intersection LOS: E	
Intersection Capacity Utilization 81.5%		ICU Level of Service D	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.

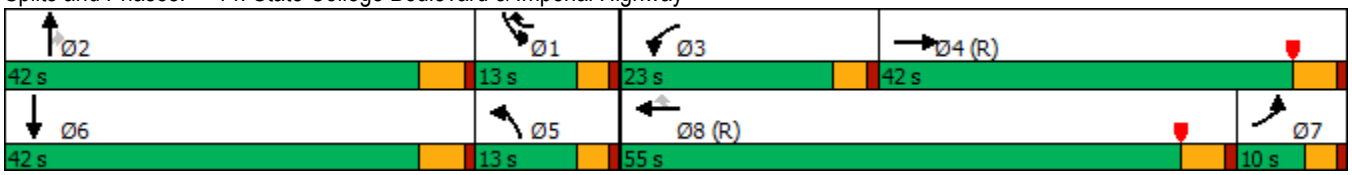
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

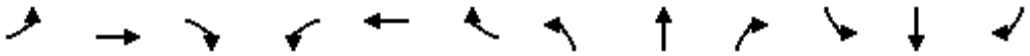
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: State College Boulevard & Imperial Highway



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	270	1903	47	77	2114	356	61	41	72	350	32	230
Future Volume (vph)	270	1903	47	77	2114	356	61	41	72	350	32	230
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	165		0	190		310	0		0	160		0
Storage Lanes	2		0	1		1	1		0	1		0
Taper Length (ft)	90			90			90			90		
Lane Util. Factor	0.97	0.91	0.91	1.00	0.91	1.00	0.91	0.91	0.95	0.97	1.00	1.00
Frt		0.996				0.850		0.909			0.868	
Flt Protected	0.950			0.950			0.950	0.997		0.950		
Satd. Flow (prot)	3252	4798	0	1676	4818	1500	1526	2911	0	3252	1532	0
Flt Permitted	0.950			0.950			0.950	0.997		0.950		
Satd. Flow (perm)	3252	4798	0	1676	4818	1500	1526	2911	0	3252	1532	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				308		72			147	
Link Speed (mph)		45			45			30			40	
Link Distance (ft)		3572			626			275			499	
Travel Time (s)		54.1			9.5			6.3			8.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	270	1903	47	77	2114	356	61	41	72	350	32	230
Shared Lane Traffic (%)							10%					
Lane Group Flow (vph)	270	1950	0	77	2114	356	55	119	0	350	262	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases						8						



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Minimum Split (s)	10.0	40.0		10.0	41.0	41.0	11.0	11.0		41.0	41.0	
Total Split (s)	15.0	57.0		11.0	53.0	53.0	11.0	11.0		41.0	41.0	
Total Split (%)	12.5%	47.5%		9.2%	44.2%	44.2%	9.2%	9.2%		34.2%	34.2%	
Maximum Green (s)	11.0	52.0		7.0	48.0	48.0	6.0	6.0		36.0	36.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lead		Lag	Lead	Lead						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max		Max	Max	
Walk Time (s)		7.0			7.0	7.0				7.0	7.0	
Flash Dont Walk (s)		28.0			29.0	29.0				29.0	29.0	
Pedestrian Calls (#/hr)		2			2	2				2	2	
Act Effct Green (s)	11.0	52.0		7.0	48.0	48.0	6.0	6.0		36.0	36.0	
Actuated g/C Ratio	0.09	0.43		0.06	0.40	0.40	0.05	0.05		0.30	0.30	
v/c Ratio	0.91	0.94		0.79	1.10	0.45	0.72	0.56		0.36	0.47	
Control Delay	51.3	9.9		42.4	64.4	1.7	102.3	35.1		29.4	18.3	
Queue Delay	0.0	0.0		0.0	1.3	0.0	0.0	0.0		0.0	0.0	
Total Delay	51.3	9.9		42.4	65.7	1.7	102.3	35.1		29.4	18.3	
LOS	D	A		D	E	A	F	D		C	B	
Approach Delay		15.0			56.0			56.3			24.7	
Approach LOS		B			E			E			C	
Queue Length 50th (ft)	115	122		63	~656	16	47	19		90	50	
Queue Length 95th (ft)	m117	m120		m61	m216	m14	#127	52		200	226	
Internal Link Dist (ft)		3492			546			195			419	
Turn Bay Length (ft)	165			190		310				160		
Base Capacity (vph)	298	2081		97	1927	784	76	213		975	562	
Starvation Cap Reductn	0	0		0	6	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.91	0.94		0.79	1.10	0.45	0.72	0.56		0.36	0.47	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 68 (57%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.10			
Intersection Signal Delay: 36.2		Intersection LOS: D	
Intersection Capacity Utilization 88.8%		ICU Level of Service E	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.

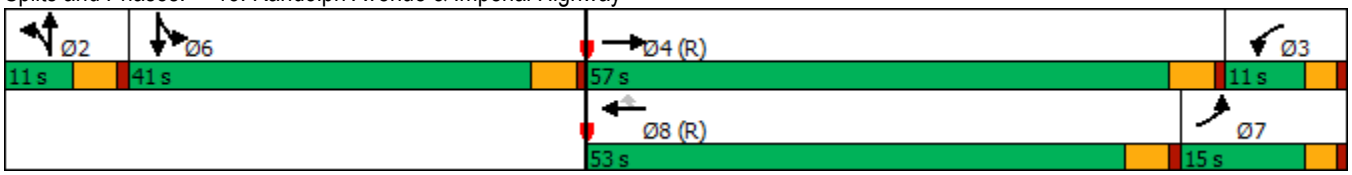
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

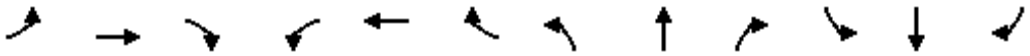
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Randolph Avenue & Imperial Highway



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	2080	118	497	2038	518	385	628	471	464	331	103
Future Volume (vph)	118	2080	118	497	2038	518	385	628	471	464	331	103
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1000	1800	1800
Storage Length (ft)	180		290	325		250	150		200	260		0
Storage Lanes	2		1	2		1	2		1	2		0
Taper Length (ft)	90			90			90			90		
Lane Util. Factor	0.97	0.86	0.86	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	0.95
Frt		0.992				0.850			0.850		0.964	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3252	6022	0	3252	4818	1500	3252	3353	1500	1807	3232	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3252	6022	0	3252	4818	1500	3252	3353	1500	1807	3232	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10				109			202		35	
Link Speed (mph)		45			45			40			40	
Link Distance (ft)		626			521			1426			728	
Travel Time (s)		9.5			7.9			24.3			12.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	118	2080	118	497	2038	518	385	628	471	464	331	103
Shared Lane Traffic (%)												
Lane Group Flow (vph)	118	2198	0	497	2038	518	385	628	471	464	434	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	2.17	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases						8			2			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Minimum Split (s)	10.0	35.0		10.0	42.0	10.0	10.0	42.0	42.0	10.0	40.0	
Total Split (s)	10.0	44.0		15.0	49.0	19.0	21.0	42.0	42.0	19.0	40.0	
Total Split (%)	8.3%	36.7%		12.5%	40.8%	15.8%	17.5%	35.0%	35.0%	15.8%	33.3%	
Maximum Green (s)	6.0	39.0		11.0	44.0	15.0	17.0	37.0	37.0	15.0	35.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	3.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0	4.0	4.0	5.0	5.0	4.0	5.0	
Lead/Lag	Lag	Lag		Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	None	None	Max	Max	None	Max	
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		23.0			30.0			30.0	30.0		28.0	
Pedestrian Calls (#/hr)		2			2			2	2		2	
Act Effct Green (s)	6.0	39.0		11.0	44.0	60.0	17.0	37.0	37.0	15.0	35.0	
Actuated g/C Ratio	0.05	0.32		0.09	0.37	0.50	0.14	0.31	0.31	0.12	0.29	
v/c Ratio	0.73	1.12		1.67	1.15	0.64	0.84	0.61	0.78	2.06	0.45	
Control Delay	49.6	78.6		335.1	107.3	10.0	66.9	38.3	31.5	515.5	30.4	
Queue Delay	0.0	0.0		0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	49.6	78.6		335.1	107.9	10.0	66.9	38.3	31.5	515.5	30.4	
LOS	D	E		F	F	A	E	D	C	F	C	
Approach Delay		77.1			128.3			43.6			281.1	
Approach LOS		E			F			D			F	
Queue Length 50th (ft)	44	~556		~288	~691	153	151	217	197	~299	160	
Queue Length 95th (ft)	m52	m#625		m#229	m508	m107	#228	281	341	#407	217	
Internal Link Dist (ft)		546			441			1346			648	
Turn Bay Length (ft)	180			325		250	150		200	260		
Base Capacity (vph)	162	1963		298	1766	804	460	1033	602	225	967	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	283	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.73	1.12		1.67	1.37	0.64	0.84	0.61	0.78	2.06	0.45	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 116 (97%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.06			
Intersection Signal Delay: 114.5		Intersection LOS: F	
Intersection Capacity Utilization 107.3%		ICU Level of Service G	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.

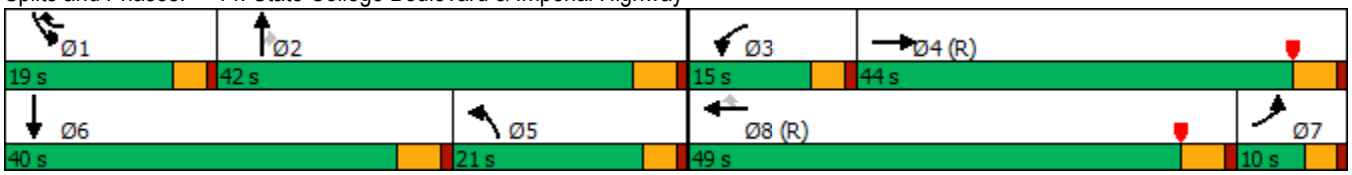
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

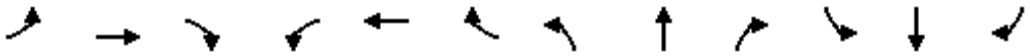
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: State College Boulevard & Imperial Highway



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	338	1684	68	151	1996	497	107	49	209	441	90	314
Future Volume (vph)	338	1684	68	151	1996	497	107	49	209	441	90	314
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	165		0	190		310	0		0	160		0
Storage Lanes	2		0	1		1	1		0	1		0
Taper Length (ft)	90			90			90			90		
Lane Util. Factor	0.97	0.91	0.91	1.00	0.91	1.00	0.91	0.91	0.95	0.97	1.00	1.00
Frt		0.994				0.850		0.883			0.883	
Flt Protected	0.950			0.950			0.950	0.998		0.950		
Satd. Flow (prot)	3252	4789	0	1676	4818	1500	1526	2830	0	3252	1558	0
Flt Permitted	0.950			0.950			0.950	0.998		0.950		
Satd. Flow (perm)	3252	4789	0	1676	4818	1500	1526	2830	0	3252	1558	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6				437		193			150	
Link Speed (mph)		45			45			30			40	
Link Distance (ft)		3572			626			275			499	
Travel Time (s)		54.1			9.5			6.3			8.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	338	1684	68	151	1996	497	107	49	209	441	90	314
Shared Lane Traffic (%)							10%					
Lane Group Flow (vph)	338	1752	0	151	1996	497	96	269	0	441	404	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases						8						



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Minimum Split (s)	10.0	40.0		10.0	41.0	41.0	11.0	11.0		41.0	41.0	
Total Split (s)	17.0	52.0		15.0	50.0	50.0	12.0	12.0		41.0	41.0	
Total Split (%)	14.2%	43.3%		12.5%	41.7%	41.7%	10.0%	10.0%		34.2%	34.2%	
Maximum Green (s)	13.0	47.0		11.0	45.0	45.0	7.0	7.0		36.0	36.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lead		Lag	Lead	Lead						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max		Max	Max	
Walk Time (s)		7.0			7.0	7.0				7.0	7.0	
Flash Dont Walk (s)		28.0			29.0	29.0				29.0	29.0	
Pedestrian Calls (#/hr)		2			2	2				2	2	
Act Effct Green (s)	13.0	47.0		11.0	45.0	45.0	7.0	7.0		36.0	36.0	
Actuated g/C Ratio	0.11	0.39		0.09	0.38	0.38	0.06	0.06		0.30	0.30	
v/c Ratio	0.96	0.93		0.99	1.11	0.60	1.08	0.78		0.45	0.71	
Control Delay	62.8	13.6		63.2	61.2	0.5	171.3	33.2		35.8	30.6	
Queue Delay	0.0	0.0		0.0	0.0	0.9	0.0	0.0		0.0	0.0	
Total Delay	62.8	13.6		63.2	61.2	1.5	171.3	33.2		35.8	30.6	
LOS	E	B		E	E	A	F	C		D	C	
Approach Delay		21.6			50.1			69.5			33.3	
Approach LOS		C			D			E			C	
Queue Length 50th (ft)	144	176		125	~621	7	~91	31		142	177	
Queue Length 95th (ft)	m151	m203		m116	m102	m0	#215	#95		191	300	
Internal Link Dist (ft)		3492			546			195			419	
Turn Bay Length (ft)	165			190		310				160		
Base Capacity (vph)	352	1879		153	1806	835	89	346		975	572	
Starvation Cap Reductn	0	0		0	0	134	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.96	0.93		0.99	1.11	0.71	1.08	0.78		0.45	0.71	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 114 (95%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.11			
Intersection Signal Delay: 38.9		Intersection LOS: D	
Intersection Capacity Utilization 100.0%		ICU Level of Service G	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.

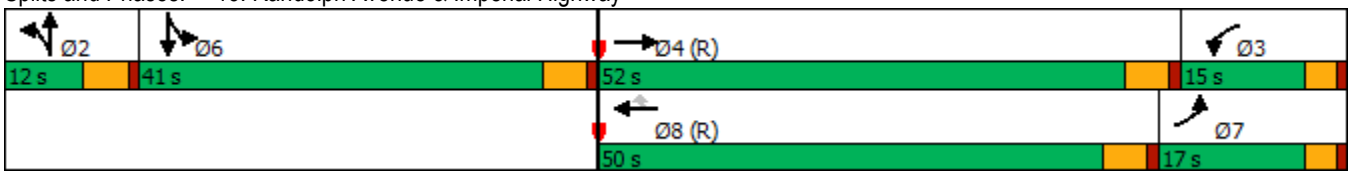
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

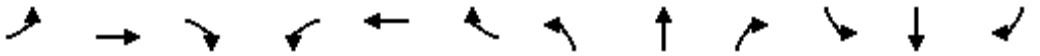
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Randolph Avenue & Imperial Highway



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	146	1770	239	699	2190	1155	326	655	780	617	442	195
Future Volume (vph)	146	1770	239	699	2190	1155	326	655	780	617	442	195
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1000	1800	1800
Storage Length (ft)	180		290	325		250	150		200	260		0
Storage Lanes	2		1	2		1	2		1	2		0
Taper Length (ft)	90			90			90			90		
Lane Util. Factor	0.97	0.86	0.86	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	0.95
Frt		0.982				0.850			0.850		0.954	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3252	5961	0	3252	4818	1500	3252	3353	1500	1807	3199	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3252	5961	0	3252	4818	1500	3252	3353	1500	1807	3199	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		30				67			207		59	
Link Speed (mph)		45			45			40			40	
Link Distance (ft)		626			521			1426			728	
Travel Time (s)		9.5			7.9			24.3			12.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	146	1770	239	699	2190	1155	326	655	780	617	442	195
Shared Lane Traffic (%)												
Lane Group Flow (vph)	146	2009	0	699	2190	1155	326	655	780	617	637	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	2.17	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases						8			2			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Minimum Split (s)	10.0	35.0		10.0	42.0	10.0	10.0	42.0	42.0	10.0	40.0	
Total Split (s)	10.0	43.0		15.0	48.0	18.0	22.0	44.0	44.0	18.0	40.0	
Total Split (%)	8.3%	35.8%		12.5%	40.0%	15.0%	18.3%	36.7%	36.7%	15.0%	33.3%	
Maximum Green (s)	6.0	38.0		11.0	43.0	14.0	18.0	39.0	39.0	14.0	35.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	3.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0	4.0	4.0	5.0	5.0	4.0	5.0	
Lead/Lag	Lag	Lag		Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	None	None	Max	Max	None	Max	
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		23.0			30.0			30.0	30.0		28.0	
Pedestrian Calls (#/hr)		2			2			2	2		2	
Act Effct Green (s)	6.0	38.0		11.0	43.0	62.0	18.0	39.0	39.0	14.0	35.0	
Actuated g/C Ratio	0.05	0.32		0.09	0.36	0.52	0.15	0.32	0.32	0.12	0.29	
v/c Ratio	0.90	1.05		2.35	1.27	1.43	0.67	0.60	1.24	2.94	0.65	
Control Delay	74.0	55.8		635.7	157.1	222.5	55.7	36.8	149.9	904.6	37.3	
Queue Delay	0.0	0.0		0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	74.0	55.8		635.7	157.6	222.5	55.7	36.8	149.9	904.6	37.3	
LOS	E	E		F	F	F	E	D	F	F	D	
Approach Delay		57.1			258.8			90.4			464.0	
Approach LOS		E			F			F			F	
Queue Length 50th (ft)	54	~473		~471	~782	~1185	124	223	~639	~425	206	
Queue Length 95th (ft)	m#74	m#546		m#475	m#781	m#1192	174	286	#884	#541	272	
Internal Link Dist (ft)		546			441			1346			648	
Turn Bay Length (ft)	180			325		250	150		200	260		
Base Capacity (vph)	162	1908		298	1726	807	487	1089	627	210	974	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	224	0	0	0	0	0	1	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.90	1.05		2.35	1.46	1.43	0.67	0.60	1.24	2.94	0.65	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 30 (25%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.94			
Intersection Signal Delay: 207.3		Intersection LOS: F	
Intersection Capacity Utilization 127.4%		ICU Level of Service H	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.

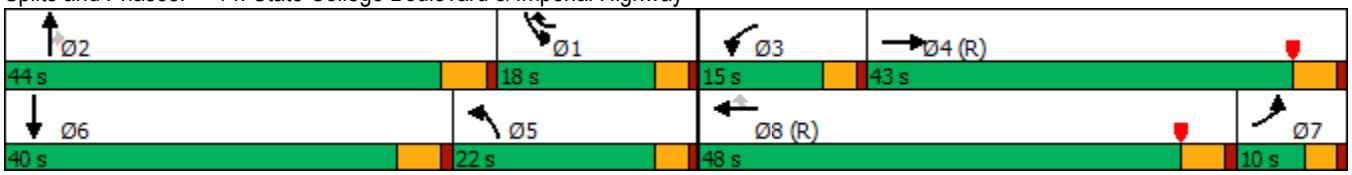
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: State College Boulevard & Imperial Highway



APPENDIX F-V

YEAR 2045 PLUS PROJECT TRAFFIC CONDITIONS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	138	1742	27	43	1882	182	39	20	71	192	22	78
Future Volume (vph)	138	1742	27	43	1882	182	39	20	71	192	22	78
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	165		0	190		310	0		0	160		0
Storage Lanes	2		0	1		1	1		0	1		0
Taper Length (ft)	90			90			90			90		
Lane Util. Factor	0.97	0.91	0.91	1.00	0.91	1.00	0.91	0.91	0.95	0.97	1.00	1.00
Frt		0.998				0.850		0.888			0.883	
Flt Protected	0.950			0.950			0.950	0.998		0.950		
Satd. Flow (prot)	3252	4808	0	1676	4818	1500	1526	2846	0	3252	1558	0
Flt Permitted	0.950			0.950			0.950	0.998		0.950		
Satd. Flow (perm)	3252	4808	0	1676	4818	1500	1526	2846	0	3252	1558	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				182		71			78	
Link Speed (mph)		45			45			30			40	
Link Distance (ft)		3572			626			275			499	
Travel Time (s)		54.1			9.5			6.3			8.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	138	1742	27	43	1882	182	39	20	71	192	22	78
Shared Lane Traffic (%)							10%					
Lane Group Flow (vph)	138	1769	0	43	1882	182	35	95	0	192	100	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases						8						

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Minimum Split (s)	10.0	40.0		10.0	41.0	41.0	11.0	11.0		41.0	41.0	
Total Split (s)	11.0	58.0		10.0	57.0	57.0	11.0	11.0		41.0	41.0	
Total Split (%)	9.2%	48.3%		8.3%	47.5%	47.5%	9.2%	9.2%		34.2%	34.2%	
Maximum Green (s)	7.0	53.0		6.0	52.0	52.0	6.0	6.0		36.0	36.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lead		Lag	Lead	Lead						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max		Max	Max	
Walk Time (s)		7.0			7.0	7.0				7.0	7.0	
Flash Dont Walk (s)		28.0			29.0	29.0				29.0	29.0	
Pedestrian Calls (#/hr)		2			2	2				2	2	
Act Effct Green (s)	7.0	55.0		6.0	52.0	52.0	6.0	6.0		36.0	36.0	
Actuated g/C Ratio	0.06	0.46		0.05	0.43	0.43	0.05	0.05		0.30	0.30	
v/c Ratio	0.73	0.80		0.52	0.90	0.24	0.46	0.45		0.20	0.19	
Control Delay	43.2	5.8		45.5	8.0	0.5	75.0	26.6		24.9	8.9	
Queue Delay	0.0	0.0		0.0	0.3	0.0	0.0	0.0		0.0	0.0	
Total Delay	43.2	5.8		45.5	8.3	0.5	75.0	26.6		24.9	8.9	
LOS	D	A		D	A	A	E	C		C	A	
Approach Delay		8.5			8.4			39.6			19.4	
Approach LOS		A			A			D			B	
Queue Length 50th (ft)	59	46		36	54	0	29	9		39	4	
Queue Length 95th (ft)	m63	m52		m42	74	m1	#72	40		94	70	
Internal Link Dist (ft)		3492			546			195			419	
Turn Bay Length (ft)	165			190		310				160		
Base Capacity (vph)	189	2204		83	2087	753	76	209		975	522	
Starvation Cap Reductn	0	0		0	21	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.73	0.80		0.52	0.91	0.24	0.46	0.45		0.20	0.19	

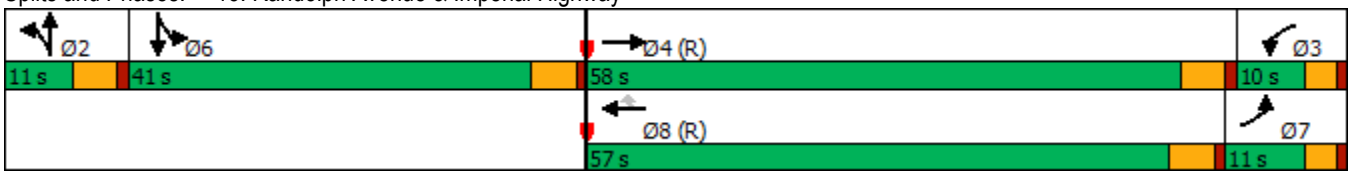
Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 10.1		Intersection LOS: B	
Intersection Capacity Utilization 67.5%		ICU Level of Service C	
Analysis Period (min) 15			

95th percentile volume exceeds capacity, queue may be longer.

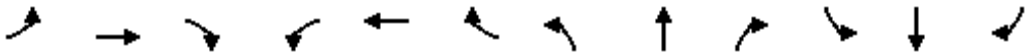
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Randolph Avenue & Imperial Highway



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	1775	214	534	1953	203	125	186	479	151	502	33
Future Volume (vph)	37	1775	214	534	1953	203	125	186	479	151	502	33
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1000	1800	1800
Storage Length (ft)	180		290	325		250	150		200	260		0
Storage Lanes	2		1	2		1	2		1	2		0
Taper Length (ft)	90			90			90			90		
Lane Util. Factor	0.97	0.86	0.86	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	0.95
Frt		0.984				0.850			0.850		0.991	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3252	5973	0	3252	4818	1500	3252	3353	1500	1807	3323	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3252	5973	0	3252	4818	1500	3252	3353	1500	1807	3323	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25				201			357		6	
Link Speed (mph)		45			45			40			40	
Link Distance (ft)		626			521			1426			728	
Travel Time (s)		9.5			7.9			24.3			12.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	37	1775	214	534	1953	203	125	186	479	151	502	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	1989	0	534	1953	203	125	186	479	151	535	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	2.17	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases						8			2			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Minimum Split (s)	10.0	35.0		10.0	42.0	10.0	10.0	42.0	42.0	10.0	40.0	
Total Split (s)	10.0	42.0		23.0	55.0	13.0	13.0	42.0	42.0	13.0	42.0	
Total Split (%)	8.3%	35.0%		19.2%	45.8%	10.8%	10.8%	35.0%	35.0%	10.8%	35.0%	
Maximum Green (s)	6.0	37.0		19.0	50.0	9.0	9.0	37.0	37.0	9.0	37.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	3.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0	4.0	4.0	5.0	5.0	4.0	5.0	
Lead/Lag	Lag	Lag		Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	None	None	Max	Max	None	Max	
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		23.0			30.0			30.0	30.0		28.0	
Pedestrian Calls (#/hr)		2			2			2	2		2	
Act Effct Green (s)	6.0	37.0		19.0	54.0	68.0	9.0	37.0	37.0	9.0	37.0	
Actuated g/C Ratio	0.05	0.31		0.16	0.45	0.57	0.08	0.31	0.31	0.08	0.31	
v/c Ratio	0.23	1.07		1.04	0.90	0.22	0.51	0.18	0.68	1.12	0.52	
Control Delay	38.2	62.1		82.7	37.8	5.1	61.4	31.0	14.5	147.9	13.9	
Queue Delay	0.0	0.0		0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	38.2	62.1		82.7	38.2	5.1	61.4	31.0	14.5	147.9	13.9	
LOS	D	E		F	D	A	E	C	B	F	B	
Approach Delay		61.7			44.5			25.8			43.4	
Approach LOS		E			D			C			D	
Queue Length 50th (ft)	12	~476		~225	560	22	48	55	74	~71	53	
Queue Length 95th (ft)	m18	#553		m#280	#664	m29	81	85	201	#143	75	
Internal Link Dist (ft)		546			441			1346			648	
Turn Bay Length (ft)	180			325		250	150		200	260		
Base Capacity (vph)	162	1858		514	2168	937	243	1033	709	135	1028	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	32	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.23	1.07		1.04	0.91	0.22	0.51	0.18	0.68	1.12	0.52	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 45 (38%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.12			
Intersection Signal Delay: 47.6		Intersection LOS: D	
Intersection Capacity Utilization 82.8%		ICU Level of Service E	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.

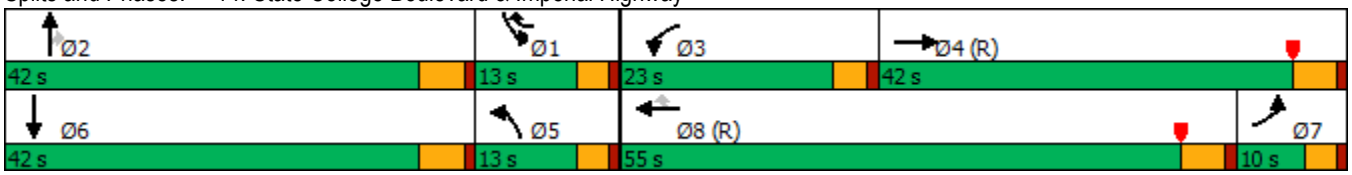
Queue shown is maximum after two cycles.

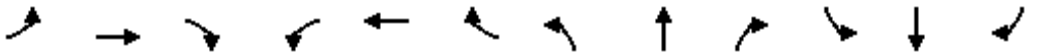
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

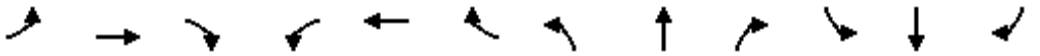
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: State College Boulevard & Imperial Highway





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	333	1903	47	77	2114	385	61	41	72	369	32	250
Future Volume (vph)	333	1903	47	77	2114	385	61	41	72	369	32	250
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	165		0	190		310	0		0	160		0
Storage Lanes	2		0	1		1	1		0	1		0
Taper Length (ft)	90			90			90			90		
Lane Util. Factor	0.97	0.91	0.91	1.00	0.91	1.00	0.91	0.91	0.95	0.97	1.00	1.00
Frt		0.996				0.850		0.909			0.867	
Flt Protected	0.950			0.950			0.950	0.997		0.950		
Satd. Flow (prot)	3252	4798	0	1676	4818	1500	1526	2911	0	3252	1530	0
Flt Permitted	0.950			0.950			0.950	0.997		0.950		
Satd. Flow (perm)	3252	4798	0	1676	4818	1500	1526	2911	0	3252	1530	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				333		72			147	
Link Speed (mph)		45			45			30			40	
Link Distance (ft)		3572			626			275			499	
Travel Time (s)		54.1			9.5			6.3			8.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	333	1903	47	77	2114	385	61	41	72	369	32	250
Shared Lane Traffic (%)							10%					
Lane Group Flow (vph)	333	1950	0	77	2114	385	55	119	0	369	282	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases						8						



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Minimum Split (s)	10.0	40.0		10.0	41.0	41.0	11.0	11.0		41.0	41.0	
Total Split (s)	15.0	57.0		11.0	53.0	53.0	11.0	11.0		41.0	41.0	
Total Split (%)	12.5%	47.5%		9.2%	44.2%	44.2%	9.2%	9.2%		34.2%	34.2%	
Maximum Green (s)	11.0	52.0		7.0	48.0	48.0	6.0	6.0		36.0	36.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lead		Lag	Lead	Lead						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max		Max	Max	
Walk Time (s)		7.0			7.0	7.0				7.0	7.0	
Flash Dont Walk (s)		28.0			29.0	29.0				29.0	29.0	
Pedestrian Calls (#/hr)		2			2	2				2	2	
Act Effct Green (s)	11.0	52.0		7.0	48.0	48.0	6.0	6.0		36.0	36.0	
Actuated g/C Ratio	0.09	0.43		0.06	0.40	0.40	0.05	0.05		0.30	0.30	
v/c Ratio	1.12	0.94		0.79	1.10	0.48	0.72	0.56		0.38	0.50	
Control Delay	95.7	8.5		42.4	64.5	1.7	102.3	35.1		31.1	20.7	
Queue Delay	0.0	0.0		0.0	1.3	0.0	0.0	0.0		0.0	0.0	
Total Delay	95.7	8.5		42.4	65.8	1.7	102.3	35.1		31.1	20.7	
LOS	F	A		D	E	A	F	D		C	C	
Approach Delay		21.2			55.5			56.3			26.6	
Approach LOS		C			E			E			C	
Queue Length 50th (ft)	~157	124		63	~656	18	47	19		97	60	
Queue Length 95th (ft)	m#157	m121		m61	m215	m16	#127	52		208	245	
Internal Link Dist (ft)		3492			546			195			419	
Turn Bay Length (ft)	165			190		310				160		
Base Capacity (vph)	298	2081		97	1927	799	76	213		975	561	
Starvation Cap Reductn	0	0		0	7	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	1.12	0.94		0.79	1.10	0.48	0.72	0.56		0.38	0.50	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 68 (57%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.12			
Intersection Signal Delay: 38.5		Intersection LOS: D	
Intersection Capacity Utilization 92.0%		ICU Level of Service F	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.

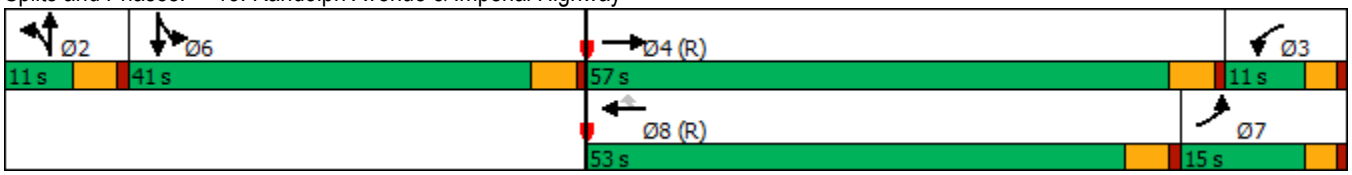
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

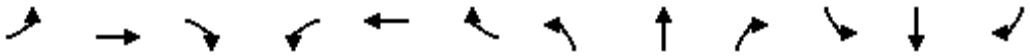
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Randolph Avenue & Imperial Highway



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	2096	122	497	2061	591	391	655	471	481	339	103
Future Volume (vph)	118	2096	122	497	2061	591	391	655	471	481	339	103
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1000	1800	1800
Storage Length (ft)	180		290	325		250	150		200	260		0
Storage Lanes	2		1	2		1	2		1	2		0
Taper Length (ft)	90			90			90			90		
Lane Util. Factor	0.97	0.86	0.86	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	0.95
Frt		0.992				0.850			0.850		0.965	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3252	6022	0	3252	4818	1500	3252	3353	1500	1807	3236	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3252	6022	0	3252	4818	1500	3252	3353	1500	1807	3236	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10				109			201		34	
Link Speed (mph)		45			45			40			40	
Link Distance (ft)		626			521			1426			728	
Travel Time (s)		9.5			7.9			24.3			12.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	118	2096	122	497	2061	591	391	655	471	481	339	103
Shared Lane Traffic (%)												
Lane Group Flow (vph)	118	2218	0	497	2061	591	391	655	471	481	442	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	2.17	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases						8			2			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Minimum Split (s)	10.0	35.0		10.0	42.0	10.0	10.0	42.0	42.0	10.0	40.0	
Total Split (s)	10.0	44.0		15.0	49.0	19.0	21.0	42.0	42.0	19.0	40.0	
Total Split (%)	8.3%	36.7%		12.5%	40.8%	15.8%	17.5%	35.0%	35.0%	15.8%	33.3%	
Maximum Green (s)	6.0	39.0		11.0	44.0	15.0	17.0	37.0	37.0	15.0	35.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	3.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0	4.0	4.0	5.0	5.0	4.0	5.0	
Lead/Lag	Lag	Lag		Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	None	None	Max	Max	None	Max	
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		23.0			30.0			30.0	30.0		28.0	
Pedestrian Calls (#/hr)		2			2			2	2		2	
Act Effct Green (s)	6.0	39.0		11.0	44.0	60.0	17.0	37.0	37.0	15.0	35.0	
Actuated g/C Ratio	0.05	0.32		0.09	0.37	0.50	0.14	0.31	0.31	0.12	0.29	
v/c Ratio	0.73	1.13		1.67	1.17	0.74	0.85	0.63	0.78	2.14	0.46	
Control Delay	49.9	83.2		335.1	112.5	11.8	68.2	39.0	31.6	547.9	30.7	
Queue Delay	0.0	0.0		0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	49.9	83.2		335.1	113.1	11.8	68.2	39.0	31.6	547.9	30.7	
LOS	D	F		F	F	B	E	D	C	F	C	
Approach Delay		81.5			129.1			44.2			300.2	
Approach LOS		F			F			D			F	
Queue Length 50th (ft)	44	~566		~288	~706	217	154	229	198	~313	163	
Queue Length 95th (ft)	m53	m#634		m#272	m#658	m195	#234	294	341	#423	222	
Internal Link Dist (ft)		546			441			1346			648	
Turn Bay Length (ft)	180			325		250	150		200	260		
Base Capacity (vph)	162	1963		298	1766	804	460	1033	601	225	967	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	283	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.73	1.13		1.67	1.39	0.74	0.85	0.63	0.78	2.14	0.46	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 116 (97%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.14			
Intersection Signal Delay: 118.8		Intersection LOS: F	
Intersection Capacity Utilization 109.4%		ICU Level of Service H	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.

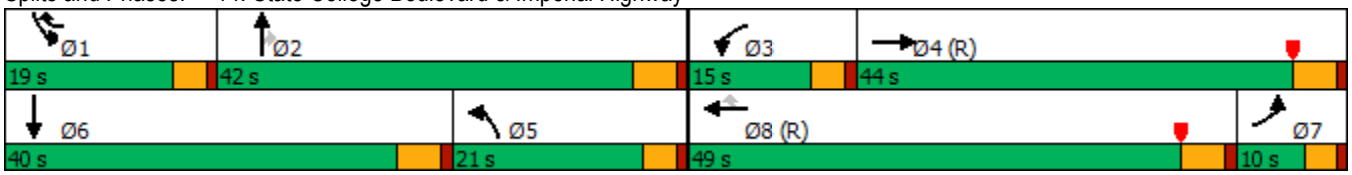
Queue shown is maximum after two cycles.

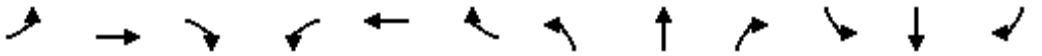
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

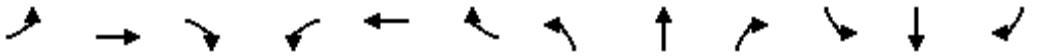
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: State College Boulevard & Imperial Highway





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	360	1684	68	151	1996	520	107	49	209	467	90	367
Future Volume (vph)	360	1684	68	151	1996	520	107	49	209	467	90	367
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	165		0	190		310	0		0	160		0
Storage Lanes	2		0	1		1	1		0	1		0
Taper Length (ft)	90			90			90			90		
Lane Util. Factor	0.97	0.91	0.91	1.00	0.91	1.00	0.91	0.91	0.95	0.97	1.00	1.00
Frt		0.994				0.850		0.883			0.880	
Flt Protected	0.950			0.950			0.950	0.998		0.950		
Satd. Flow (prot)	3252	4789	0	1676	4818	1500	1526	2830	0	3252	1553	0
Flt Permitted	0.950			0.950			0.950	0.998		0.950		
Satd. Flow (perm)	3252	4789	0	1676	4818	1500	1526	2830	0	3252	1553	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6				458		187			175	
Link Speed (mph)		45			45			30			40	
Link Distance (ft)		3572			626			275			499	
Travel Time (s)		54.1			9.5			6.3			8.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	360	1684	68	151	1996	520	107	49	209	467	90	367
Shared Lane Traffic (%)							10%					
Lane Group Flow (vph)	360	1752	0	151	1996	520	96	269	0	467	457	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases						8						



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Minimum Split (s)	10.0	40.0		10.0	41.0	41.0	11.0	11.0		41.0	41.0	
Total Split (s)	17.0	52.0		15.0	50.0	50.0	12.0	12.0		41.0	41.0	
Total Split (%)	14.2%	43.3%		12.5%	41.7%	41.7%	10.0%	10.0%		34.2%	34.2%	
Maximum Green (s)	13.0	47.0		11.0	45.0	45.0	7.0	7.0		36.0	36.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lead		Lag	Lead	Lead						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max		Max	Max	
Walk Time (s)		7.0			7.0	7.0				7.0	7.0	
Flash Dont Walk (s)		28.0			29.0	29.0				29.0	29.0	
Pedestrian Calls (#/hr)		2			2	2				2	2	
Act Effct Green (s)	13.0	47.0		11.0	45.0	45.0	7.0	7.0		36.0	36.0	
Actuated g/C Ratio	0.11	0.39		0.09	0.38	0.38	0.06	0.06		0.30	0.30	
v/c Ratio	1.02	0.93		0.99	1.11	0.61	1.08	0.79		0.48	0.78	
Control Delay	75.9	13.5		63.2	61.2	0.7	171.3	35.3		36.3	33.5	
Queue Delay	0.0	0.0		0.0	0.0	1.1	0.0	0.0		0.0	0.0	
Total Delay	75.9	13.5		63.2	61.2	1.8	171.3	35.3		36.3	33.5	
LOS	E	B		E	E	A	F	D		D	C	
Approach Delay		24.2			49.7			71.0			34.9	
Approach LOS		C			D			E			C	
Queue Length 50th (ft)	~157	176		125	~622	7	~91	34		152	206	
Queue Length 95th (ft)	m#168	m198		m115	m101	m0	#215	#101		203	345	
Internal Link Dist (ft)		3492			546			195			419	
Turn Bay Length (ft)	165			190		310				160		
Base Capacity (vph)	352	1879		153	1806	848	89	341		975	588	
Starvation Cap Reductn	0	0		0	0	143	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	1.02	0.93		0.99	1.11	0.74	1.08	0.79		0.48	0.78	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 114 (95%), Referenced to phase 4:EBT and 8:WBT, Start of Green	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.11	
Intersection Signal Delay: 39.9	Intersection LOS: D
Intersection Capacity Utilization 104.1%	ICU Level of Service G
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.

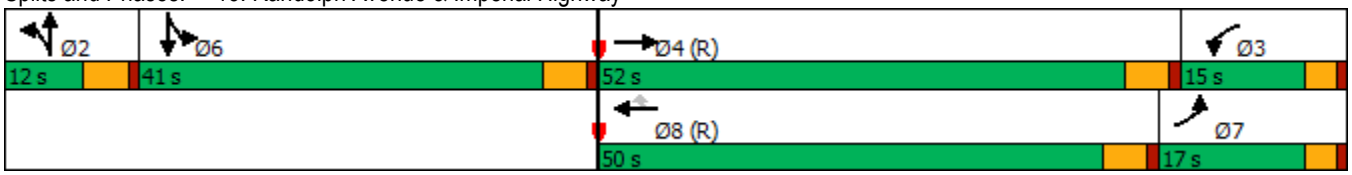
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

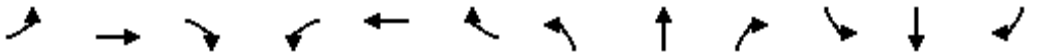
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Randolph Avenue & Imperial Highway



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	146	1791	244	699	2208	1173	331	665	780	677	464	195
Future Volume (vph)	146	1791	244	699	2208	1173	331	665	780	677	464	195
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1000	1800	1800
Storage Length (ft)	180		290	325		250	150		200	260		0
Storage Lanes	2		1	2		1	2		1	2		0
Taper Length (ft)	90			90			90			90		
Lane Util. Factor	0.97	0.86	0.86	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	0.95
Frt		0.982				0.850			0.850		0.956	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3252	5961	0	3252	4818	1500	3252	3353	1500	1807	3205	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3252	5961	0	3252	4818	1500	3252	3353	1500	1807	3205	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		30				65			207		54	
Link Speed (mph)		45			45			40			40	
Link Distance (ft)		626			521			1426			728	
Travel Time (s)		9.5			7.9			24.3			12.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	146	1791	244	699	2208	1173	331	665	780	677	464	195
Shared Lane Traffic (%)												
Lane Group Flow (vph)	146	2035	0	699	2208	1173	331	665	780	677	659	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	2.17	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases						8			2			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Minimum Split (s)	10.0	35.0		10.0	42.0	10.0	10.0	42.0	42.0	10.0	40.0	
Total Split (s)	10.0	43.0		15.0	48.0	18.0	22.0	44.0	44.0	18.0	40.0	
Total Split (%)	8.3%	35.8%		12.5%	40.0%	15.0%	18.3%	36.7%	36.7%	15.0%	33.3%	
Maximum Green (s)	6.0	38.0		11.0	43.0	14.0	18.0	39.0	39.0	14.0	35.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	3.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0	4.0	4.0	5.0	5.0	4.0	5.0	
Lead/Lag	Lag	Lag		Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	None	None	Max	Max	None	Max	
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		23.0			30.0			30.0	30.0		28.0	
Pedestrian Calls (#/hr)		2			2			2	2		2	
Act Effct Green (s)	6.0	38.0		11.0	43.0	62.0	18.0	39.0	39.0	14.0	35.0	
Actuated g/C Ratio	0.05	0.32		0.09	0.36	0.52	0.15	0.32	0.32	0.12	0.29	
v/c Ratio	0.90	1.07		2.35	1.28	1.46	0.68	0.61	1.24	3.22	0.68	
Control Delay	74.1	61.2		635.5	161.5	233.0	56.1	37.0	149.9	1030.9	38.4	
Queue Delay	0.0	0.0		0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	74.1	61.2		635.5	162.0	233.0	56.1	37.0	149.9	1030.9	38.4	
LOS	E	E		F	F	F	E	D	F	F	D	
Approach Delay		62.1			263.5			90.1			541.3	
Approach LOS		E			F			F			F	
Queue Length 50th (ft)	55	~486		~470	~793	~1216	126	227	~639	~474	218	
Queue Length 95th (ft)	m#75	m#560		m#470	m#780	m#1208	177	291	#884	#593	286	
Internal Link Dist (ft)		546			441			1346			648	
Turn Bay Length (ft)	180			325		250	150		200	260		
Base Capacity (vph)	162	1908		298	1726	806	487	1089	627	210	973	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	227	0	0	0	0	0	1	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.90	1.07		2.35	1.47	1.46	0.68	0.61	1.24	3.22	0.68	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 30 (25%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 3.22			
Intersection Signal Delay: 223.4		Intersection LOS: F	
Intersection Capacity Utilization 131.0%		ICU Level of Service H	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.

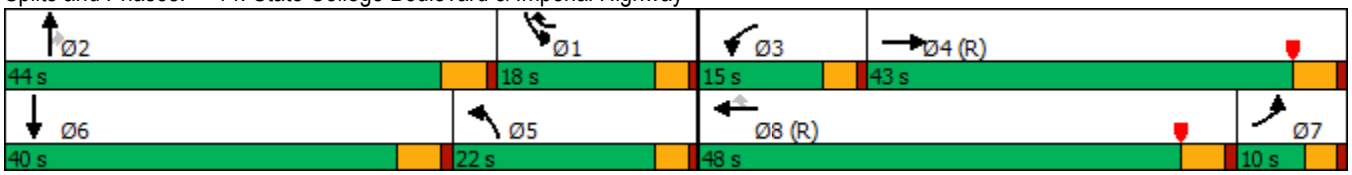
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

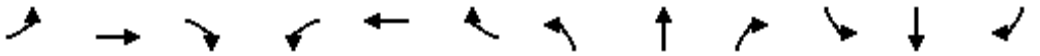
Splits and Phases: 14: State College Boulevard & Imperial Highway



APPENDIX F-VI

YEAR 2045 PLUS PROJECT WITH IMPROVEMENTS TRAFFIC CONDITIONS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	1775	214	534	1953	203	125	186	479	151	502	33
Future Volume (vph)	37	1775	214	534	1953	203	125	186	479	151	502	33
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	180		290	325		250	150		200	260		275
Storage Lanes	2		1	2		1	2		1	1		1
Taper Length (ft)	90			90			90			90		
Lane Util. Factor	0.97	0.86	0.86	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt		0.984				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3252	5973	0	3252	4818	1500	3252	3353	1500	3252	3353	1500
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3252	5973	0	3252	4818	1500	3252	3353	1500	3252	3353	1500
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25				201			357			136
Link Speed (mph)		45			45			40			40	
Link Distance (ft)		626			521			1426			728	
Travel Time (s)		9.5			7.9			24.3			12.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	37	1775	214	534	1953	203	125	186	479	151	502	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	1989	0	534	1953	203	125	186	479	151	502	33
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			36			36	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases						8			2			6



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	1	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.0	35.0		10.0	42.0	10.0	10.0	42.0	42.0	10.0	40.0	40.0
Total Split (s)	10.0	42.0		23.0	55.0	13.0	13.0	42.0	42.0	13.0	42.0	42.0
Total Split (%)	8.3%	35.0%		19.2%	45.8%	10.8%	10.8%	35.0%	35.0%	10.8%	35.0%	35.0%
Maximum Green (s)	6.0	37.0		19.0	50.0	9.0	9.0	37.0	37.0	9.0	37.0	37.0
Yellow Time (s)	3.0	4.0		3.0	4.0	3.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0		4.0	5.0	4.0	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lag	Lag		Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max	None	None	Max	Max	None	Max	Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		23.0			30.0			30.0	30.0		28.0	28.0
Pedestrian Calls (#/hr)		2			2			2	2		2	2
Act Effct Green (s)	6.0	37.0		19.2	54.2	68.0	8.8	37.0	37.0	8.8	37.0	37.0
Actuated g/C Ratio	0.05	0.31		0.16	0.45	0.57	0.07	0.31	0.31	0.07	0.31	0.31
v/c Ratio	0.23	1.07		1.02	0.90	0.22	0.53	0.18	0.68	0.64	0.49	0.06
Control Delay	38.2	62.1		79.1	37.5	5.1	62.1	31.0	14.5	46.9	14.0	0.2
Queue Delay	0.0	0.0		0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.2	62.1		79.1	37.9	5.1	62.1	31.0	14.5	46.9	14.0	0.2
LOS	D	E		E	D	A	E	C	B	D	B	A
Approach Delay		61.7			43.6			25.9			20.6	
Approach LOS		E			D			C			C	
Queue Length 50th (ft)	12	~476		~225	560	22	48	55	74	62	51	0
Queue Length 95th (ft)	m18	#553		m#280	#664	m29	81	85	201	99	73	m0
Internal Link Dist (ft)		546			441			1346			648	
Turn Bay Length (ft)	180			325		250	150		200	260		275
Base Capacity (vph)	162	1858		521	2177	930	243	1033	709	243	1033	556
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	32	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	1.07		1.02	0.91	0.22	0.51	0.18	0.68	0.62	0.49	0.06

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 45 (38%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.07			
Intersection Signal Delay: 44.7		Intersection LOS: D	
Intersection Capacity Utilization 81.7%		ICU Level of Service D	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.

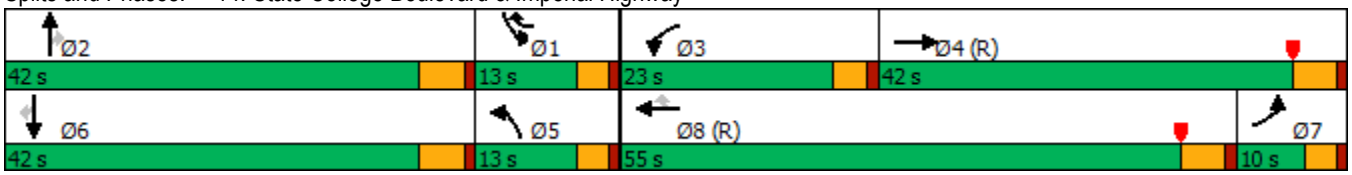
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: State College Boulevard & Imperial Highway



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	2096	122	497	2061	591	391	655	471	481	339	103
Future Volume (vph)	118	2096	122	497	2061	591	391	655	471	481	339	103
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	180		290	325		250	150		200	260		275
Storage Lanes	2		1	2		1	2		1	1		1
Taper Length (ft)	90			90			90			90		
Lane Util. Factor	0.97	0.86	0.86	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt		0.992				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3252	6022	0	3252	4818	1500	3252	3353	1500	3252	3353	1500
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3252	6022	0	3252	4818	1500	3252	3353	1500	3252	3353	1500
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10				109			201			145
Link Speed (mph)		45			45			40			40	
Link Distance (ft)		626			521			1426			728	
Travel Time (s)		9.5			7.9			24.3			12.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	118	2096	122	497	2061	591	391	655	471	481	339	103
Shared Lane Traffic (%)												
Lane Group Flow (vph)	118	2218	0	497	2061	591	391	655	471	481	339	103
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			36			36	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases						8			2			6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	1	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.0	35.0		10.0	42.0	10.0	10.0	42.0	42.0	10.0	40.0	40.0
Total Split (s)	10.0	44.0		15.0	49.0	19.0	21.0	42.0	42.0	19.0	40.0	40.0
Total Split (%)	8.3%	36.7%		12.5%	40.8%	15.8%	17.5%	35.0%	35.0%	15.8%	33.3%	33.3%
Maximum Green (s)	6.0	39.0		11.0	44.0	15.0	17.0	37.0	37.0	15.0	35.0	35.0
Yellow Time (s)	3.0	4.0		3.0	4.0	3.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0		4.0	5.0	4.0	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lag	Lag		Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max	None	None	Max	Max	None	Max	Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		23.0			30.0			30.0	30.0		28.0	28.0
Pedestrian Calls (#/hr)		2			2			2	2		2	2
Act Effct Green (s)	6.0	39.0		11.0	44.0	60.0	17.0	37.0	37.0	15.0	35.0	35.0
Actuated g/C Ratio	0.05	0.32		0.09	0.37	0.50	0.14	0.31	0.31	0.12	0.29	0.29
v/c Ratio	0.73	1.13		1.67	1.17	0.74	0.85	0.63	0.78	1.18	0.35	0.19
Control Delay	49.9	83.2		335.1	112.5	11.8	68.2	39.0	31.6	139.0	31.5	6.2
Queue Delay	0.0	0.0		0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.9	83.2		335.1	113.1	11.8	68.2	39.0	31.6	139.0	31.5	6.2
LOS	D	F		F	F	B	E	D	C	F	C	A
Approach Delay		81.5			129.1			44.2			84.7	
Approach LOS		F			F			D			F	
Queue Length 50th (ft)	44	~566		~288	~706	217	154	229	198	~236	120	16
Queue Length 95th (ft)	m53	m#634		m#272	m#658	m195	#234	294	341	#346	176	m38
Internal Link Dist (ft)		546			441			1346			648	
Turn Bay Length (ft)	180			325		250	150		200	260		275
Base Capacity (vph)	162	1963		298	1766	804	460	1033	601	406	977	540
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	279	0	0	0	0	0	0	7
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	1.13		1.67	1.39	0.74	0.85	0.63	0.78	1.18	0.35	0.19

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 116 (97%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.67			
Intersection Signal Delay: 93.7		Intersection LOS: F	
Intersection Capacity Utilization 97.8%		ICU Level of Service F	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.

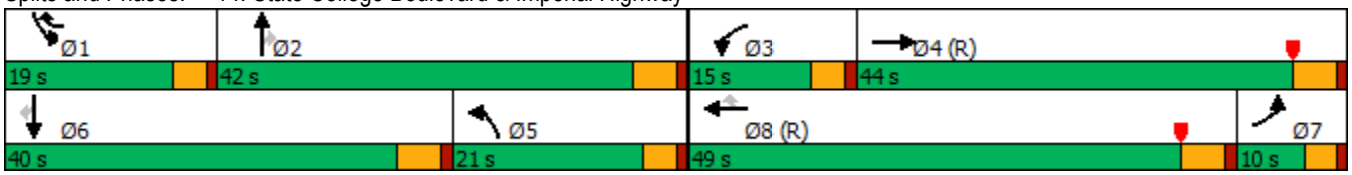
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

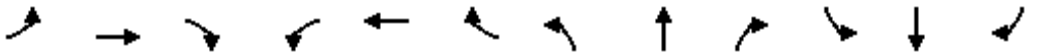
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: State College Boulevard & Imperial Highway



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	146	1791	244	699	2208	1173	331	665	780	677	464	195
Future Volume (vph)	146	1791	244	699	2208	1173	331	665	780	677	464	195
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	180		290	325		250	150		200	260		275
Storage Lanes	2		1	2		1	2		1	1		1
Taper Length (ft)	90			90			90			90		
Lane Util. Factor	0.97	0.86	0.86	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt		0.982				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3252	5961	0	3252	4818	1500	3252	3353	1500	3252	3353	1500
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3252	5961	0	3252	4818	1500	3252	3353	1500	3252	3353	1500
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		30				65			207			136
Link Speed (mph)		45			45			40			40	
Link Distance (ft)		626			521			1426			728	
Travel Time (s)		9.5			7.9			24.3			12.4	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	146	1791	244	699	2208	1173	331	665	780	677	464	195
Shared Lane Traffic (%)												
Lane Group Flow (vph)	146	2035	0	699	2208	1173	331	665	780	677	464	195
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			36			36	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases						8			2			6



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	1	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.0	35.0		10.0	42.0	10.0	10.0	42.0	42.0	10.0	40.0	40.0
Total Split (s)	10.0	43.0		15.0	48.0	18.0	22.0	44.0	44.0	18.0	40.0	40.0
Total Split (%)	8.3%	35.8%		12.5%	40.0%	15.0%	18.3%	36.7%	36.7%	15.0%	33.3%	33.3%
Maximum Green (s)	6.0	38.0		11.0	43.0	14.0	18.0	39.0	39.0	14.0	35.0	35.0
Yellow Time (s)	3.0	4.0		3.0	4.0	3.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0		4.0	5.0	4.0	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lag	Lag		Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max	None	None	Max	Max	None	Max	Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		23.0			30.0			30.0	30.0		28.0	28.0
Pedestrian Calls (#/hr)		2			2			2	2		2	2
Act Effct Green (s)	6.0	38.0		11.0	43.0	62.0	18.0	39.0	39.0	14.0	35.0	35.0
Actuated g/C Ratio	0.05	0.32		0.09	0.36	0.52	0.15	0.32	0.32	0.12	0.29	0.29
v/c Ratio	0.90	1.07		2.35	1.28	1.46	0.68	0.61	1.24	1.79	0.47	0.37
Control Delay	74.1	61.2		635.5	161.5	233.0	56.1	37.0	149.9	395.7	36.9	13.2
Queue Delay	0.0	0.0		0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.1	61.2		635.5	162.0	233.0	56.1	37.0	149.9	395.7	36.9	13.2
LOS	E	E		F	F	F	E	D	F	F	D	B
Approach Delay		62.1			263.5			90.1			215.3	
Approach LOS		E			F			F			F	
Queue Length 50th (ft)	55	~486		~470	~793	~1216	126	227	~639	~405	155	34
Queue Length 95th (ft)	m#75	m#560		m#470	m#780	m#1208	177	291	#884	#523	207	97
Internal Link Dist (ft)		546			441			1346			648	
Turn Bay Length (ft)	180			325		250	150		200	260		275
Base Capacity (vph)	162	1908		298	1726	806	487	1089	627	379	977	533
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	223	0	0	0	0	0	0	7
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.90	1.07		2.35	1.47	1.46	0.68	0.61	1.24	1.79	0.47	0.37

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 30 (25%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.35			
Intersection Signal Delay: 176.9		Intersection LOS: F	
Intersection Capacity Utilization 114.7%		ICU Level of Service H	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.

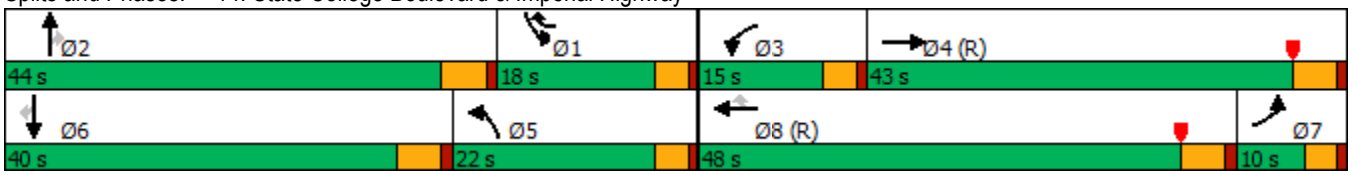
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: State College Boulevard & Imperial Highway



Appendix I2: VMT Memorandum

Appendices

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TECHNICAL MEMORANDUM

To:	Nicole Vermilion PlaceWorks	Date:	April 21, 2022
From:	Richard E. Barretto, P.E., Principal Zawwar Saiyed, P.E., Associate Principal Shane Green, P.E., Senior Transportation Engineer Linscott, Law and Greenspan, Engineers	LLG Ref:	2.19.4099.1
Subject:	***Vehicle Miles Traveled (VMT) Screening Assessment for The Brea Mall Mixed-Use Project*** Brea, California		

Linscott, Law & Greenspan, Engineers (LLG) is pleased to submit this Vehicle Miles Traveled (VMT) Screening Assessment for the proposed Brea Mall Mixed-Use Project (herein after referred to as "Project") in the City of Brea, Orange County, California. This Technical Memorandum presents a comparison of the Project's anticipated VMT generation characteristics against the City of Brea screening criteria to determine if the Project is likely, or conversely unlikely, to have a VMT impact and if additional study is required. It should be noted that the approach and methodology outlined in this Technical Memorandum is consistent with the *City of Brea Transportation Impact Analysis (TIA) Guidelines (dated September 2020)*, which provides additional detail on the language and analysis procedures described in this Technical Memorandum.

The following sections of this Technical Memorandum summarizes the Project description, presents the City of Brea's VMT screening criteria, analysis methodology and thresholds, and Project VMT.

PROJECT DESCRIPTION

The Brea Mall is an existing regional shopping center that is located in the City of Brea in northeast Orange County. The Brea Mall is located west of the State Route 57 (SR-57) Freeway and is generally bound by State College Boulevard to the east, Imperial Highway (State Route 91) to the south, Randolph Avenue to the west, and Birch Street to the north. ***Figure 1*** presents a vicinity map for the Project site. ***Figure 2*** presents an existing aerial of the Project site.

Existing Land Uses and Entitlements

The existing Brea Mall currently encompasses 1,291,433 square feet (SF) of Gross Leasable Area (GLA), of which 1,210,438 SF of GLA is occupied and consists of several major department stores and a central core of a mixture of retail shops and restaurant/food uses. Surrounding the retail core are several free-standing retail structures along the Brea Mall Circle, including the Olive Garden, Red Lobster, The Cheesecake Factory, and BJ's Restaurant.

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As with any regional shopping center, the mall experiences periodic transitions in tenants and occupancy. The Sears department store, which is designated for demolition, was vacated in April 2018. However, currently first floor of the Sears department store has been re-occupied by Q's fashion retail store; the second floor of the Sears department store totaling 80,995 SF of GLA is currently still vacant.

Proposed Project Development

The proposed Project consists of the redevelopment of 15.0 acres in the southwest portion of the Brea Mall property that includes the Sears parcel and adjoining transition areas adjacent to Nordstrom and Macy's. The proposed Project involves demolishing the former Sears department store and associated auto center (161,990 SF) and approximately 7.5 acres of surface parking to allow for the development of a mix of uses including retail, new restaurants, for-rent residential apartment, a resort-type fitness center, and a public gathering space (large "central green" plaza). The total conceptual limit of disturbance for the proposed Project to the existing Brea Mall site is approximately 15.0 acres.

Based on a review of the description of the retail component of the proposed Project, up to 247,415 SF of additional retail space, inclusive of a 50,000 SF sporting goods store and a 128,000 SF health club will be constructed. The residential component of the proposed Project (Option 1), which would be developed south of the Nordstrom's parking structure, includes the development of a seven-story, 441,027 SF apartment podium with up to 383 apartment homes consisting of 28 studio units, 215 one-bedroom units and 140 two-bedroom units.

Table 1 provides the Project development summary. A review of *Table 1* indicates that upon completion of the Project, Brea Mall will have total GLA of 1,376,858 SF and a 383 unit apartment community. ***Figure 3*** presents the conceptual site plan for the Project, prepared by the architecture and design firm AO.

PROJECT SCREENING CRITERIA

Project screening is used to determine if a project will be required to conduct a detailed VMT analysis. The following section discusses the various screening methods outlined in the *City of Brea Transportation Impact Analysis (TIA) Guidelines (dated September 2020)*, and outlines whether the Project will screen-out of further analysis, either in its entirety, or partially based on individual land uses. Project components that screen-out are assumed to have no significant impact on transportation.

Step 1: Transit Priority Area (TPA) Screening

The *City of Brea Transportation Impact Analysis (TIA) Guidelines (dated September 2020)* states that:

> Projects located within a TPA may be presumed to have a less than significant impact absent substantial evidence to the contrary. This presumption may NOT be appropriate if the project:
>
> 1. Has a Floor Area Ratio (FAR) of less than 0.75;
> 2. Includes more parking for use by residents, customers, or employees of the project than required by the City;
> 3. Is inconsistent with the applicable Sustainable Communities Strategy (as determined by the City of Brea, with input from the Southern California Association of Governments [SCAG]); or
> 4. Replaces affordable residential units with a smaller number of moderate- or high-income residential units.

Transit Priority Area (TPA) Assessment

TPA's are defined as a ½ mile area around an existing major transit stop or an existing stop along a high-quality transit corridor. Major transit stop means a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods. HQTA's are defined as a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours.

The existing Brea Mall includes the Brea Mall Transit Center, located on the eastern portion of the site. The transit routes that serve the Brea Mall Transit Center and their estimated arrival times for the both the AM peak hour and PM peak hour are listed below:

Transit Route	Direction	AM Peak Hour Arrival Times	PM Peak Hour Arrival Times
OCTA Route 57	Northbound	7:14, 7:29, 7:44	5:01, 5:25, 5:49
	Southbound	7:03, 7:18, 7:33, 7:42	5:21, 5:45
OCTA Route 129	Eastbound	7:27	5:06, 5:56
	Westbound	7:50	5:35
OCTA Route 143	Eastbound	--	5:55

	Westbound	7:07	4:58
OCTA Route 153	Northbound	7:11	5:01
	Southbound	7:28	5:13
OCTA Route 213	Northbound	--	5:47
	Southbound	--	--
Foothill Transit Route 286	Northbound	7:05	5:05
	Southbound	7:57	5:52

Based upon the transit service routes and frequencies outlined above, it is hereby determined that the Brea Mall Transit Center meets OPR's definition of a major transit stop and thus can be considered a TPA.

Floor Area Ratio (FAR) Assessment

Floor Area Ratio (FAR) is the relationship between the total amount of usable floor area of a development and the total area of the development lot.

Proposed Project

As described previously, the commercial component of the proposed Project is comprised of 247,415 SF of retail. The 383 unit apartment building will be five levels consisting of 441,027 SF of residential space over four levels of structured parking (two subterranean and two podium levels) totaling 421,355 SF that will provide parking for both the residential and health club uses. This results in a total development of 1,109,797 SF. Based on the conceptual limit of disturbance of 15.0 acres (equivalent to 653,400 SF) to the existing Brea Mall site, the FAR for the proposed Project can be calculated as follows:

$$Project\ FAR = \frac{1{,}109{,}797\ SF}{653{,}400\ SF} = 1.698$$

Based on the above calculation, it can be determined that the proposed Project has a FAR greater than 0.75.

Parking Assessment

To determine the number of parking spaces required for the proposed Project, the parking codes per *Section 20.08.040 Off-Street Parking and Loading* the City of Brea Municipal Code are as follows:

- **Shopping Centers:** five and one-half (5.5) spaces per 1,000 SF
- **Residential (2 or more dwelling units on one building site or lot):**

- Bachelor Unit: one and one-half (1.5) spaces per unit, of which one (1) space shall be located within a garage or three (3) sided carport
- One (1) Bedroom Unit: one and three-quarter (1.75) spaces per unit, of which one (1) space shall be located within a garage or three (3) sided carport
- Two (2) Bedroom Unit: two (2) spaces per unit, of which one (1) space shall be located within a garage or three (3) sided carport
- All Building Sites/Lots Containing Five (5) or More Units: two-tenths (0.2) guest parking space shall be provided for each dwelling unit, in addition to the required number of parking spaces stated above

Proposed Project

The City Code-based parking requirements for the proposed Project (Option 1) are presented below:

Project Description	Size	City of Brea Code Parking Ratio	Spaces Required
Parking Requirement			
▪ Shopping Center	247,415 SF	5.5 spaces per 1,000 SF	1,361
▪ Studio	28 Units	1.5 spaces per unit	42
▪ 1 Bedroom	215 Units	1.75 spaces per unit	375
▪ 2 Bedroom	140 Units	2 spaces per unit	280
▪ Guest	383 Units	0.2 spaces per unit	77
		Parking Requirement:	**2,135**
Proposed Parking Supply[1]			
▪ Parking Structure	421,355 SF	--	1,515
▪ Surface Stalls	--	--	89
		Total Parking Supply:	**1,604**
		Parking Surplus/Deficiency (+/-):	**-531**

As shown, direct application of the City Code parking ratios results in a total Code-based parking requirement of 2,135 spaces for the proposed Project. When compared against a proposed parking supply of 1,604 parking spaces, the proposed Project does not satisfy the City's parking requirements.

[1] *Table 3-4a Brea Mall Surface and Structure Parking, Option 1,* received December 2, 2021.

Sustainable Communities Strategy Assessment

The proposed Project is consistent with the applicable Sustainable Communities Strategy as directed by City staff.

Affordable Housing Assessment

Since the proposed Project does not include replacing existing affordable residential units, this criterion is not met.

Based on the above, the proposed Project can be determined to be located within a TPA. Therefore, it can be concluded that the proposed Project, based on City requirements, would be screened out from a VMT assessment and its VMT impacts are presumed to be less than significant.

Step 2: Low VMT Area Screening

Based on the *City of Brea Transportation Impact Analysis (TIA) Guidelines (dated September 2020),* residential and office projects located within a low VMT-generating area may be presumed to have a less than significant impact absent substantial evidence to the contrary as presented in *Attachment C Low VMT Area Map.*

Based on the above, the Project does not screen-out of further analysis since it is not located in a low VMT area per the Low VMT Area Map for the City of Brea.

Step 3: Project Type Screening

The *City of Brea Transportation Impact Analysis (TIA) Guidelines (dated September 2020)* states that:

- The following uses can be presumed to have a less than significant impact absent substantial evidence to the contrary as their uses are local serving in nature:
    - Local parks
    - Local-serving retail uses less than 50,000 square feet
    - Community institutions (public libraries, fire stations, local government)
    - Affordable, supportive, or transitional housing
    - Project generating less than 110 daily vehicle trips

Proposed Project

As outlined in ***Table 2***, the proposed Project to replace existing Brea Mall retail and parking with additional commercial and residential uses is anticipated to result in a net addition in site generated traffic of approximately 3,159 trips on a typical weekday.

Based on the above, the proposed Project components do not screen-out since they do not fall within the categories listed above and they are anticipated to generate more than 110 daily vehicle trips

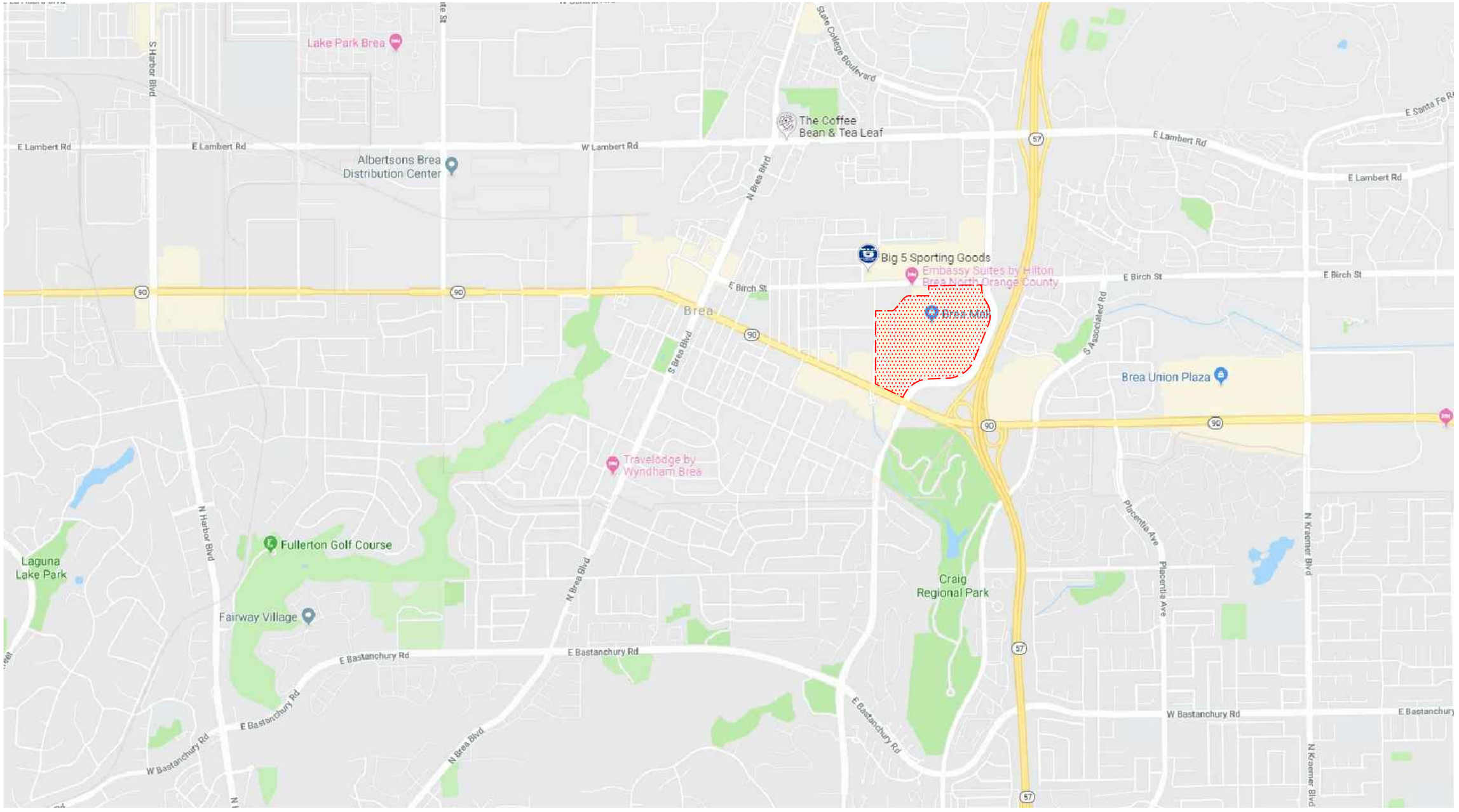
CONCLUSION

Consistent with the *City of Brea Transportation Impact Analysis (TIA) Guidelines (dated September 2020)* and based on the VMT methodology, criteria, guidelines, thresholds and results outlined in this Technical Memorandum, the proposed Project is located within a TPA. Therefore, in accordance with the City's guidelines, the proposed Project is assumed to have no significant CEQA related transportation impacts and thus no further VMT analysis is necessary or required.

* * * * * * * * * * *

We appreciate the opportunity to provide this Technical Memorandum. Should you have any questions regarding the memorandum, please contact us at (949) 825-6175.

cc: File



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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

SOURCE: GOOGLE

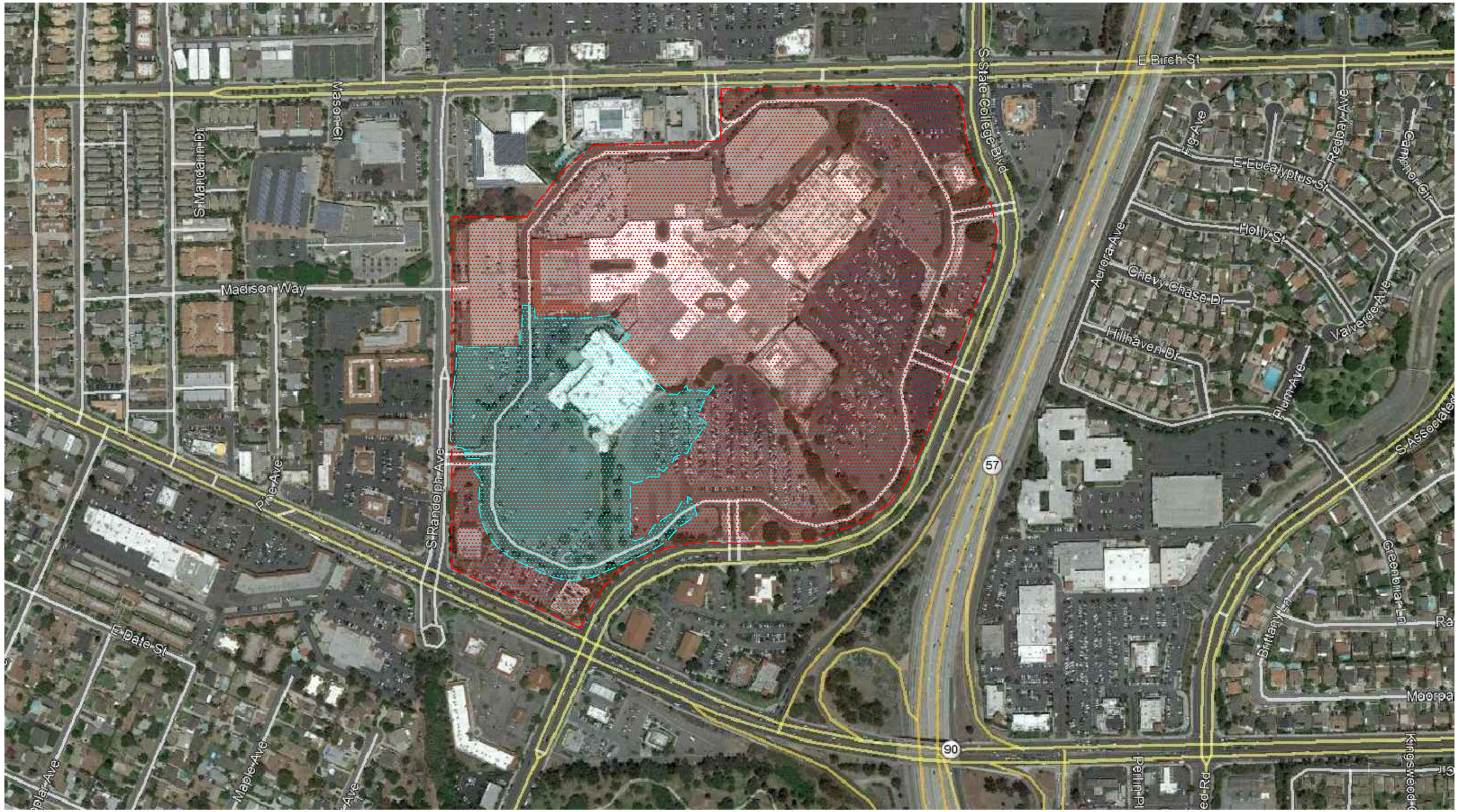
KEY

= PROJECT SITE

FIGURE 1

VICINITY MAP

BREA MALL EXPANSION & IMPROVEMENT, BREA



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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

SOURCE: GOOGLE

KEY

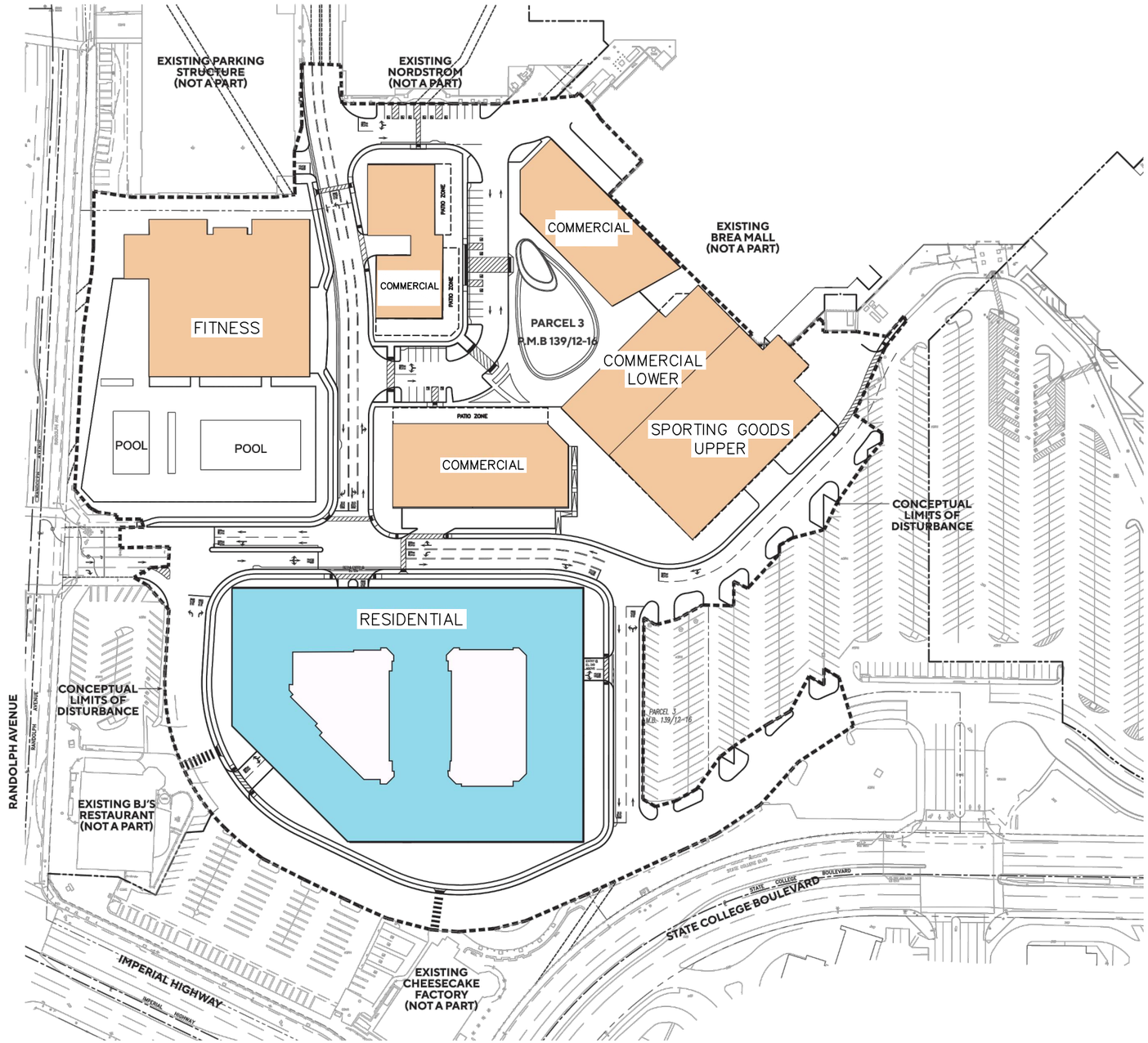
= BREA MALL

= PROJECT SITE

FIGURE 2

EXISTING AERIAL PHOTOGRAPH

BREA MALL MIXED-USE PROJECT, BREA



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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

SOURCE: ARCHITECTURE AND DESIGN FIRM AO

FIGURE 3

CONCEPTUAL PROJECT SITE PLAN

BREA MALL EXPANSION & IMPROVEMENT, BREA

LINSCOTT LAW & GREENSPAN engineers

TABLE 1
PROPOSED PROJECT DEVELOPMENT SUMMARY
BREA MALL MIXED-USE PROJECT, BREA

Land Use/Project Description	Development Totals
Existing Occupied Brea Mall:	
▪ Existing Occupied Mall	1,210,438 SF GLA
Existing Occupied Brea Mall + Vacancy:	
▪ Existing Occupied Mall	1,210,438 SF GLA
▪ Vacant Second Story Sears Tenant	80,995 SF GLA
Fully Occupied Brea Mall	*1,291,433 SF GLA*
Existing Occupied Brea Mall + Proposed Project:	
▪ Existing Occupied Mall	1,210,438 SF GLA
▪ Existing Occupied Mall to be Demolished	-80,995 SF GLA
▪ Proposed Project Commercial[2]	
o Sporting Goods	50,000 SF GLA
o Fitness Center	128,000 SF GLA
o Non-Anchor Mall Retail	69,415 SF GLA
Existing Occupied Brea Mall + Proposed Project Subtotal	*1,376,858 SF GLA*
▪ Proposed Project Multifamily Homes[3]	
o Studio	28 Units
o 1 Bedroom	215 Units
o 2 Bedroom	140 Units
Proposed Residential	*383 Units*

[2] *Table 3-2 Brea Mall Mixed Use Project Land Use Summary,* received December 2, 2021.
[3] *Table 3-3a Residential Building A Summary,* received December 2, 2021.

TABLE 2
PROJECT TRAFFIC GENERATION RATES AND FORECAST[7]
BREA MALL MIXED-USE PROJECT, BREA

ITE Land Use Code/ Project Description	Weekday							Saturday			
	Daily	AM Peak Hour			PM Peak Hour			Daily	MD Peak Hour		
	2-Way	Enter	Exit	Total	Enter	Exit	Total	2-Way	Enter	Exit	Total
Trip Generation Factors:											
• 221: Multifamily Housing (Mid-Rise) (TE/DU)[8]	5.44	26%	74%	0.36	61%	39%	0.44	4.91	49%	51%	0.44
• 820: Shopping Center (TE/TSF GLA)	Eq.[9]	62%	38%	Eq.[9]	48%	52%	Eq.[9]	Eq.[9]	52%	48%	Eq.[9]
• Health Club (TE/TSF)[10]	27.44	1.02	0.51	1.53	1.85	0.97	2.83	26.35	1.04	1.79	2.83
Existing Occupied Brea Mall:											
• Existing Shopping Center (1,210,438 SF)	32,766	469	288	757	1,651	1,788	3,439	41,824	2,308	2,130	4,438
Pass-by Reduction[11]	-3,277	-23	-15	-38	-165	-179	-344	-4,182	-231	-213	-444
Existing Occupied Brea Mall Subtotal	***29,489***	***446***	***273***	***719***	***1,486***	***1,609***	***3,095***	***37,642***	***2,077***	***1,917***	***3,994***
Existing Occupied Brea Mall + Vacancy:											
• Fully Occupied Shopping Center (1,291,433 SF)[12]	34,241	494	303	797	1,732	1,876	3,608	43,537	2,429	2,242	4,671
Pass-by Reduction[11]	-3,424	-25	-15	-40	-173	-188	-361	-4,354	-243	-224	-467
Fully Occupied Brea Mall Total	***30,817***	***469***	***288***	***757***	***1,559***	***1,688***	***3,247***	***39,183***	***2,186***	***2,018***	***4,204***
Existing Occupied Brea Mall + Proposed Project:											
• Proposed Shopping Center (1,248,858 SF)[13]	33,469	481	295	776	1,690	1,830	3,520	42,642	2,365	2,184	4,549
Internal Capture[14]	-934	-1	-1	-2	-28	-48	-76	-842	-37	-39	-76
Proposed Shopping Center Subtotal	*32,535*	*480*	*294*	*774*	*1,662*	*1,782*	*3,444*	*41,800*	*2,328*	*2,145*	*4,473*
Pass-by Reduction[11]	-3,254	-24	-15	-39	-166	-178	-344	-4,180	-233	-214	-447
Proposed Shopping Center Subtotal	*29,281*	*456*	*279*	*735*	*1,496*	*1,604*	*3,100*	*37,620*	*2,095*	*1,931*	*4,026*
• Proposed Health Club (128,000 SF)	3,512	131	65	196	237	125	362	3,373	133	229	362
• Proposed Residential (383 DU)	2,084	36	102	138	103	66	169	1,881	83	86	169
Internal Capture[14]	-917	-1	-1	-2	-47	-28	-75	-827	-38	-36	-74
Proposed Residential Subtotal	*1,167*	*35*	*101*	*136*	*56*	*38*	*94*	*1,054*	*45*	*50*	*95*
Existing Occupied Brea Mall + Proposed Project Total	***33,976***	***622***	***445***	***1,067***	***1,789***	***1,767***	***3,556***	***42,060***	***2,274***	***2,210***	***4,484***
Net Trip Generation (Existing Occupied Brea Mall + Proposed Project) - (Existing Occupied Brea Mall + Vacancy)	**3,159**	**153**	**157**	**310**	**230**	**79**	**309**	**2,877**	**88**	**192**	**280**

Notes:
TE/DU = Trip End per Dwelling Unit
TE/TSF GLA = Trip End per Thousand Square Feet Gross Leasable Area
TE/TSF = Trip End per Thousand Square Feet

---

7 Source: *Trip Generation*, 10th Edition, Institute of Transportation Engineers (ITE), Washington, D.C. (2017).

8 Mid-Rise Multifamily Housing consists of buildings that are between 3 and 10 levels.

9 Trip Generation rates based on the following equations:
- Weekday Daily: Ln(T) = 0.68Ln(X) + 5.57
- Weekday AM Peak Hour: T = 0.50(X) + 151.78
- Weekday PM Peak Hour: Ln(T) = 0.74Ln(X) + 2.89
- Saturday Daily: Ln(T) = 0.62Ln(X) + 6.24
- Saturday Peak Hour of Generator: Ln(T) = 0.79Ln(X) + 2.79

10 Source: *Northshore Mall Redevelopment Traffic Impact and Access Study,* prepared by vhb, dated April 2018. As there is no Sunday Daily and Sunday Midday peak hour empirical rates available, Saturday Daily and Saturday Midday peak hour empirical rates have been applied.

11 The pass-by trip reductions applied to retail trips are 10% for Weekday Daily, 5% for Weekday AM peak hour, 10% for Weekday PM peak hour, 10% for Saturday Daily, 10% for Saturday Midday peak hour, 10% for Sunday Daily, and 10% for Sunday Midday peak hour.

12 The fully occupied Brea Mall includes the existing 1,210,438 SF of occupied mall and 80,995 SF of second floor Sears vacancy.

13 The proposed Brea Mall includes the existing 1,210,438 SF of occupied mall, 80,995 SF of the occupied first floor of the Sears building to be demolished, and 119,415 SF of additional commercial.

14 Consistent with the *Trip Generation Handbook,* published by ITE (2017), Project trip generation was adjusted to account for internal capture between the retail and residential components of the Project. As there is no Saturday or Sunday internal capture worksheets available, Weekday Daily and Weekday PM peak hour calculations have been applied to Saturday Daily, Saturday Midday peak hour, Sunday Daily, and Sunday Midday peak hour.