TRAFFIC IMPACT ANALYSIS REPORT

LBCCD STADIUM AND ATHLETIC SPORTS COMPLEX

Long Beach, California
April 15, 2024

Prepared for:

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LLG Ref. 2-23-4728-1

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TABLE OF CONTENTS

TABLE OF CONTENTS (CONTINUED)

SECTION PAGE

APPENDICES

APPENDIX

LIST OF FIGURES

LIST OF TABLES

EXECUTIVE SUMMARY

Project Description

- The Long Beach Community College District (LBCCD) is proposing the construction of a new state-of-the-art Stadium and Athletic Sports Complex along with existing facility renovations on an approximately 18-acre site at the Liberal Arts Campus. The proposed Project site is located on the west side of the current Veterans Memorial Stadium, in Parking Lot M of the Liberal Arts Campus, located at 4901 East Carson Street in the City of Long Beach, California.

- The Stadium and Athletic Sports Complex will include approximately 180,000 SF of new construction, covering a portion of Parking Lot M. The existing Veterans Stadium will be demolished as part of the proposed Project, which will include 40,783 SF of demolition. The existing uses of Buildings Q, R and S will all be contained within the Stadium and Athletic Sports Complex. The proposed capacity of the stadium portion of the Project will be approximately 10,000 seats, while the proposed capacity of the Arena will be approximately 2,500 seats. The proposed Project is anticipated to be completed by the Year 2029. The proposed Project will be used by campus students and staff, and the current classes/programs/events that now occur on campus are expected to continue at the new facility. However, the new construction and renovation will result in a state-of-the-art Stadium and Athletic Sports Complex facility that would increase enrollment in classes/programs at those facilities. Current enrollment in classes associated with the facilities included in the Project is 842 students and is at 60% of the available capacity. The potential growth of student enrollment related to the Project includes the following conservative assumptions:

    - The maximum growth estimate due to the improved facilities would be an increase of 35% enrollment in the current courses.
    - The overall enrollment in those classes would increase up to 1,343 students from the existing 842 enrollment (i.e. resulting in a 501 student increase).

  Therefore, this traffic study will evaluate an increase of 501 students that will be associated with the proposed Project. Vehicular access to the proposed Project would continue to be provided via various unsignalized access driveways located along Lew Davis Street, Conant Street, Faculty Avenue and Clark Avenue

- The proposed Project is forecast to generate approximately 576 daily trips, with 55 trips (45 inbound, 10 outbound) produced in the AM peak hour and 55 trips (31 inbound, 24 outbound) produced in the PM peak hour on a "typical" weekday.

Study Area

- The ten (10) key study intersections selected for evaluation were determined based on consideration of the criteria contained within the *City of Long Beach Traffic Impact Analysis Guidelines, dated June 2020.* The key study intersections listed below provide both local and regional access to the study area and define the extent of the boundaries for this traffic investigation.

Key Study Intersections

1. Lakewood Boulevard at Carson Street
2. Faculty Avenue at Carson Street
3. Clark Avenue at Carson Street
4. Bellflower Boulevard at Carson Street
5. Clark Avenue at Lew Davis Street
6. Lakewood Boulevard at Conant Street
7. Faculty Avenue at Conant Street
8. Clark Avenue at Conant Street
9. Lakewood Boulevard at Wardlow Road
10. Clark Avenue at Wardlow Road

Related Projects Description

- The eleven (11) cumulative projects are expected to generate a combined total of 4,218 daily trips, 464 AM peak hour trips (367 inbound and 97 outbound) and 494 PM peak hour trips (134 inbound and 360 outbound) on a typical weekday.

Traffic Analysis

Existing Traffic Conditions

- All of the key study intersections currently operate at LOS D or better during the weekday AM and PM peak hours.

Existing Plus Project Traffic Conditions

- All of the key study intersections are forecast to operate at acceptable LOS D or better during the weekday AM and PM peak hours under Existing Plus Project traffic conditions. As such, no intersection capacity enhancing or traffic signal operational improvements are required or recommended.

Year 2029 Cumulative Traffic Conditions

- All of the key study intersections are forecast to operate at acceptable LOS D or better during the weekday AM and PM peak hours under Year 2029 Cumulative traffic conditions.

Year 2029 Cumulative Plus Project Traffic Conditions

- All of the key study intersections are forecast to operate at acceptable LOS D or better during the weekday AM and PM peak hours under Year 2029 Cumulative Plus Project traffic conditions. As such, no intersection capacity enhancing or traffic signal operational improvements are required or recommended.

Intersection Vehicle Queuing Analysis

Existing Plus Project Traffic Conditions

- Six (6) of the nine (9) signalized key study intersections experience queues which exceed the available storage capacity for some movements, with the addition of Project traffic. The remaining study intersections have queues which are accommodated within the existing storage. The intersections with a lane storage deficiency include the following:
    - Intersection 1: Lakewood Boulevard at Carson Street
        - Eastbound Left-Turn – PM peak hour
        - Eastbound Right-Turn – AM and PM peak hours
    - Intersection 3: Clark Avenue at Carson Street
        - Eastbound Right-Turn – AM peak hour
        - Westbound Left-Turn – AM peak hour
    - Intersection 4: Bellflower Boulevard at Carson Street
        - Northbound Through – AM and PM peak hours
        - Southbound Left-Turn – AM peak hour
        - Southbound Through – AM peak hour
        - Southbound Through/Right-Turn – AM peak hour
    - Intersection 5: Clark Avenue at Lew Davis Street
        - Eastbound Left-Turn – PM peak hour
    - Intersection 9: Lakewood Boulevard at Wardlow Road
        - Westbound Left-Turn – AM peak hour
        - Westbound Right-Turn – AM peak hour
    - Intersection 10: Clark Avenue at Wardlow Road
        - Westbound Left-Turn/Through – AM peak hour
        - Westbound Through/Right-Turn – AM peak hour

- Although there is a storage deficiency, it should be noted that the Project does not add volume to the eastbound left-turn movement at the intersection of Lakewood Boulevard at Carson Street (Intersection No. 1), the northbound through, southbound left-turn, and southbound through movements at the intersection of Bellflower Boulevard at Carson Street (Intersection No. 4), the westbound left-turn and right-turn movements at the intersection of Lakewood Boulevard at Wardlow Road (Intersection No. 9), and the westbound left-turn/through

movement at the intersection of Clark Avenue at Wardlow Road (Intersection No. 10). Therefore, improvements at these intersections are not required/recommended.

The Project does add traffic to the remaining movements including the eastbound right-turn movement at the intersection of Lakewood Boulevard at Carson Street (Intersection No. 1), the eastbound right-turn and westbound left-turn movements at the intersection of Clark Avenue at Carson Street (Intersection No. 3), the southbound through/right-turn movement at the intersection of Bellflower Boulevard at Carson Street (Intersection No. 4), the eastbound left-turn movement at the intersection of Clark Avenue at Lew Davis Street (Intersection No. 5), and the westbound through/right-turn movement at the intersection of Clark Avenue at Wardlow Road (Intersection No. 10). However, these approaches have an increase of less than one vehicle with the addition of the Project. Therefore, improvements at these intersections are not required/recommended.

Year 2029 Cumulative Plus Project Traffic Conditions

- Seven (7) of the nine (9) signalized key study intersections experience queues which exceed the available storage capacity for some movements, with the addition of Project traffic. The remaining study intersections have queues which are accommodated within the existing storage. The intersections with a lane storage deficiency include the following:
    - Intersection 1: Lakewood Boulevard at Carson Street
        - Southbound Left-Turn – AM peak hour
        - Eastbound Left-Turn – PM peak hour
        - Eastbound Right-Turn – AM and PM peak hours
    - Intersection 3: Clark Avenue at Carson Street
        - Eastbound Right-Turn – AM peak hour
        - Westbound Left-Turn – AM peak hour
    - Intersection 4: Bellflower Boulevard at Carson Street
        - Northbound Left-Turn – PM peak hour
        - Northbound Through – AM and PM peak hours
        - Southbound Left-Turn – AM peak hour
        - Southbound Through – AM peak hour
        - Southbound Through/Right-Turn – AM peak hour
    - Intersection 5: Clark Avenue at Lew Davis Street
        - Eastbound Left-Turn – PM peak hour
    - Intersection 6: Lakewood Boulevard at Lew Davis Street
        - Northbound Left-Turn – AM peak hour
        - Eastbound Right-Turn – PM peak hour
    - Intersection 9: Lakewood Boulevard at Wardlow Road
        - Westbound Left-Turn – AM peak hour
        - Westbound Right-Turn – AM peak hour

- Intersection 10: Clark Avenue at Wardlow Road
  - Westbound Left-Turn/Through – AM peak hour
  - Westbound Through/Right-Turn – AM peak hour

- Although there is a storage deficiency, it should be noted that the Project does not add volume to the southbound left-turn and eastbound left-turn movements at the intersection of Lakewood Boulevard at Carson Street (Intersection No. 1), the northbound left-turn, northbound through, southbound left-turn, and southbound through movements at the intersection of Bellflower Boulevard at Carson Street (Intersection No. 4), the northbound left-turn and eastbound right-turn movements at the intersection of Lakewood Boulevard at Lew Davis Street (Intersection No. 6), the westbound left-turn and right-turn movements at the intersection of Lakewood Boulevard at Wardlow Road (Intersection No. 9), and the westbound left-turn/through movement at the intersection of Clark Avenue at Wardlow Road (Intersection No. 10). Therefore, improvements at these intersections are not required/recommended.

  The Project does add traffic to the remaining movements including the eastbound right-turn movement at the intersection of Lakewood Boulevard at Carson Street (Intersection No. 1), the eastbound right-turn and westbound left-turn movements at the intersection of Clark Avenue at Carson Street (Intersection No. 3), the southbound through/right-turn movement at the intersection of Bellflower Boulevard at Carson Street (Intersection No. 4), the eastbound left-turn movement at the intersection of Clark Avenue at Lew Davis Street (Intersection No. 5), and the westbound through/right-turn movement at the intersection of Clark Avenue at Wardlow Road (Intersection No. 10). However, these approaches have an increase of less than one vehicle with the addition of the Project. Therefore, improvements at these intersections are not required/recommended.

Area-Wide Traffic Improvements

Existing Plus Project Traffic Conditions

- The results of the Existing With Project traffic conditions level of service analyses indicate that the proposed Project will not have an effect on the LOS at any of the ten (10) key study intersections. All ten (10) key study intersections are forecast to operate at acceptable service levels under Existing Plus Project traffic conditions. As such, no improvement measures have been recommended.

Year 2029 Cumulative Plus Project Traffic Conditions

- The results of the Year 2029 With Project traffic conditions level of service analyses indicate that the proposed Project will not have an effect on the LOS at any of the ten (10) key study intersections. All ten (10) key study intersections are forecast to operate at acceptable service levels under Year 2029 Cumulative Plus Project traffic conditions. As such, no improvement measures have been recommended.

Vehicle Miles Traveled (VMT) Analysis

- The City VMT guidelines include screening criteria, thresholds of significance, methodologies, and mitigation measures for development projects. The screening criteria enables a variety of projects to be screened out of complicated VMT analyses and therefore resulting in a less-than significant VMT impact. The conditions of land developments to be screened out may be the size, location, proximity to transit, or trip making potential. Land development projects that have one or more of the following attributes may be presumed to create a less than significant impact:

  - *Screening and Thresholds for Other Land Uses* – The development of institutional/government and public service uses that support community health, safety, and welfare will be presumed to have a less than significant transportation impact.

    The proposed Project consists of the construction of a new state-of-the-art Stadium and Athletic Sports Complex. The proposed Project will be used by campus students and staff, and the current classes/programs/events that now occur on campus are expected to continue at the new facility. In addition, the existing uses that currently occur within existing Buildings Q, R and S will all be contained within the Stadium and Athletic Sports Complex. The existing LBCCD Liberal Arts Campus is a local serving community college (i.e. institutional land use) and with the proposed Project will continue to the serve the community. Lastly, it should be noted that while the Project trip generation reflects the average daily trips (ADT) associated with 501 new students (i.e. 576 ADT), the daily trip generation forecast is overly conservative based on a projected 95% enrollment for all classes, such that the daily trip generation will very likely be much less than the 500 daily trip VMT daily trip threshold. Therefore, given that the proposed Project is an institutional land use and will very likely generate less than 500 daily trips, it is presumed to have a less than significant impact on VMT based on this screening criteria.

TRAFFIC IMPACT ANALYSIS REPORT

LBCCD STADIUM AND ATHLETIC SPORTS COMPLEX

Long Beach, California
April 15, 2024

1.0 INTRODUCTION

This traffic study report addresses the potential traffic circulation needs associated with the Long Beach Community College District (LBCCD) Stadium and Athletic Sports Complex Project (hereinafter referred to as Project). The LBCCD is proposing the construction of a new state-of-the-art Stadium and Athletic Sports Complex along with existing facility renovations on an approximately 18-acre site at the Liberal Arts Campus. The proposed Project site is located on the west side of the current Veterans Memorial Stadium, in Parking Lot M of the Liberal Arts Campus, located at 4901 East Carson Street in the City of Long Beach, California.

The Stadium and Athletic Sports Complex will include approximately 180,000 square-feet (SF) of new construction, covering a portion of Parking Lot M. The existing Veterans Stadium will be demolished as part of the proposed Project, which will include 40,783 SF of demolition. The existing uses of Buildings Q, R and S will all be contained within the Stadium and Athletic Sports Complex. The proposed capacity of the stadium portion of the Project will be approximately 10,000 seats, while the proposed capacity of the Arena will be approximately 2,500 seats. The proposed Project is anticipated to be completed by the Year 2029. The proposed Project will be used by campus students and staff, and the current classes/programs/events that now occur on campus are expected to continue at the new facility. However, the new construction and renovation will result in a state-of-the-art Stadium and Athletic Sports Complex facility that would increase enrollment in classes/programs at those facilities. Current enrollment in classes associated with the facilities included in the Project is 842 students and is at 60% of the available capacity. The potential growth of student enrollment related to the Project includes the following conservative assumptions:

- The maximum growth estimate due to the improved facilities would be an increase of 35% enrollment in the current courses.
- The overall enrollment in those classes would increase up to 1,343 students from the existing 842 enrollment (i.e. resulting in a 501 student increase).

1.1 Scope of Work

This report documents the findings and recommendations of a traffic study, conducted by Linscott, Law & Greenspan, Engineers (LLG) to determine the nature and extent of the traffic that would be associated with the proposed Project and consider whether any roadway network improvements would be required. The traffic analysis evaluates the existing operating conditions at ten (10) key study intersections within the project vicinity, estimates the trip generation potential of the proposed Project, and forecasts future operating conditions without and with the Project. Where necessary, intersection improvement measures are identified. This traffic study satisfies the requirements of the *City of Long Beach Traffic Impact Analysis Guidelines, dated June 2020.*

The Project site has been visited and an inventory of adjacent area roadways and intersections was performed. Existing peak hour traffic information has been collected at the ten (10) key study intersections on a "typical" weekday 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 City of Long Beach and the City of Lakewood. Based on our research, there are three (3) cumulative projects in the City of Long Beach and eight (8) cumulative projects in the City of Lakewood. These eleven (11) planned and/or approved cumulative projects were considered in the cumulative traffic analysis for this project.

This traffic report analyzes existing and future weekday AM peak hour and PM peak hour traffic conditions for a near-term (Year 2029) traffic setting upon completion of the proposed Project. Peak hour traffic forecasts for the Year 2029 opening year have been projected by increasing existing traffic volumes by an annual growth rate of 1% per year and adding traffic volumes generated by eleven (11) cumulative projects.

1.2 Study Area

The ten (10) key study intersections selected for evaluation were determined based on consideration of the criteria contained within the *City of Long Beach Traffic Impact Analysis Guidelines, dated June 2020.* The key study intersections listed below provide both local and regional access to the study area and define the extent of the boundaries for this traffic investigation.

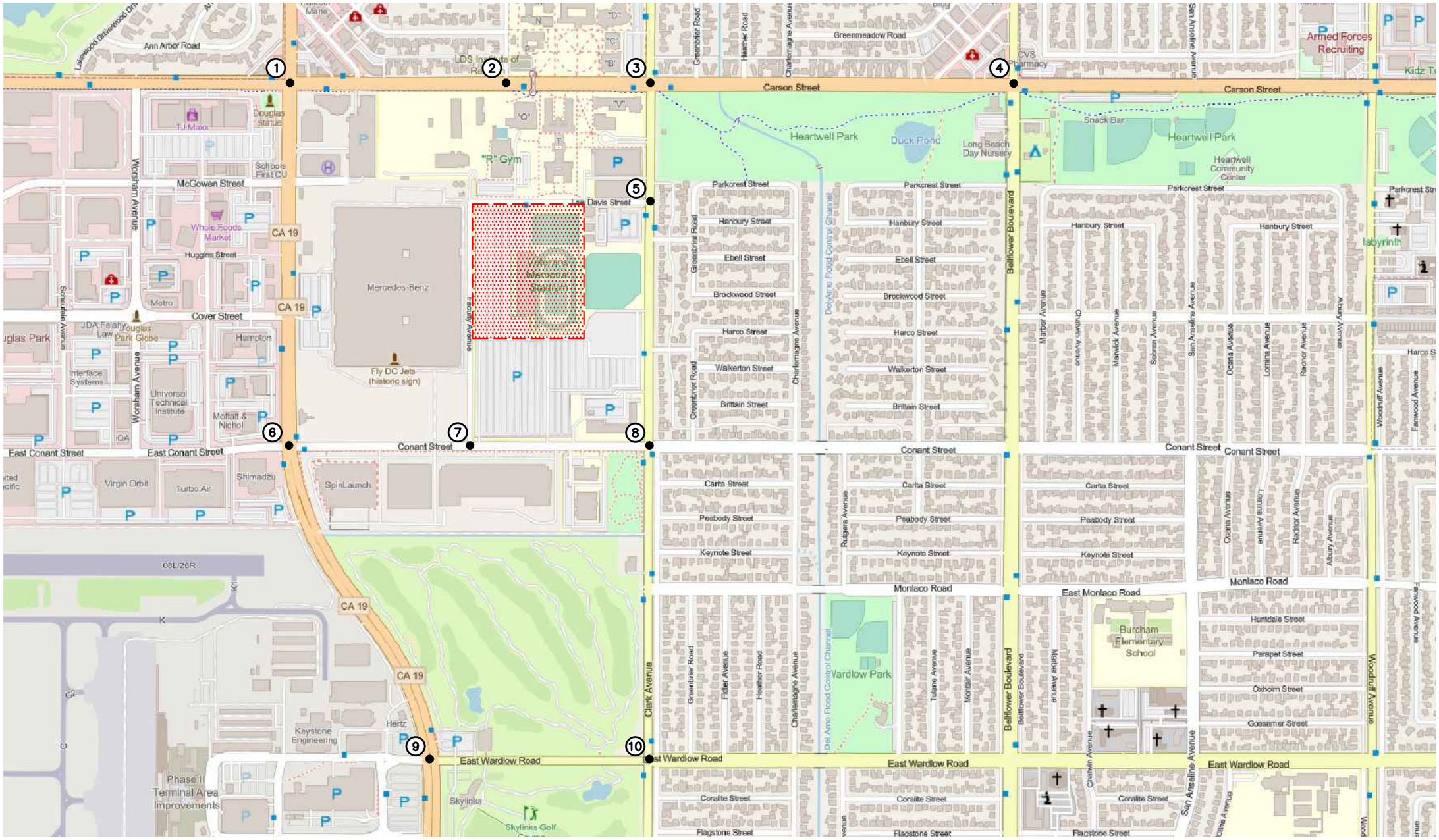
Key Study Intersections

1. Lakewood Boulevard at Carson Street
2. Faculty Avenue at Carson Street
3. Clark Avenue at Carson Street
4. Bellflower Boulevard at Carson Street
5. Clark Avenue at Lew Davis Street
6. Lakewood Boulevard at Conant Street
7. Faculty Avenue at Conant Street
8. Clark Avenue at Conant Street
9. Lakewood Boulevard at Wardlow Road
10. Clark Avenue at Wardlow Road

Figure 1-1 presents a Vicinity Map, which illustrates the general location of the Project and depicts the study locations and surrounding street system. The Delay and Level of Service (LOS) investigations at these key locations were used to evaluate the potential traffic-related circulation effects associated with area growth, cumulative projects and the proposed Project. When necessary, this report recommends intersection improvements that may be required to accommodate future traffic volumes and restore/maintain an acceptable Level of Service.

Included in this traffic study report are:

- Existing traffic counts,
- Estimated project traffic generation/distribution/assignment,
- Estimated cumulative project traffic generation/distribution/assignment,
- AM and PM peak hour capacity analyses for existing conditions,
- AM and PM peak hour capacity analyses for existing plus project conditions,
- AM and PM peak hour capacity analyses for future near-term (Year 2029) conditions,
- AM and PM peak hour capacity analyses for future near-term (Year 2029) plus project conditions,
- Intersection Vehicle Queuing Analyses,
- Recommended Improvements, and
- Vehicle Miles Traveled (VMT) Assessment.



LLG

N NO SCALE

SOURCE: OPEN STREETS

KEY

(#) = STUDY INTERSECTION

= PROJECT SITE

FIGURE 1-1

VICINITY MAP

LBCCD STADIUM AND ATHLETIC SPORTS COMPLEX, LONG BEACH

2.0 PROJECT DESCRIPTION

The LBCCD is proposing the construction of a new state-of-the-art Stadium and Athletic Sports Complex along with existing facility renovations on an approximately 18-acre site at the Liberal Arts Campus. The proposed Project site is located on the west side of the current Veterans Memorial Stadium, in Parking Lot M of the Liberal Arts Campus, located at 4901 East Carson Street in the City of Long Beach, California. ***Figure 2-1*** presents the existing site aerial.

Figure 2-2 presents the proposed site plan for the proposed Project. As shown, the Stadium and Athletic Sports Complex will include approximately 180,000 SF of new construction, covering a portion of Parking Lot M. The existing Veterans Stadium will be demolished as part of the proposed Project, which will include 40,783 SF of demolition. The existing uses of Buildings Q, R and S will all be contained within the Stadium and Athletic Sports Complex. The proposed capacity of the stadium portion of the Project will be approximately 10,000 seats, while the proposed capacity of the Arena will be approximately 2,500 seats. The proposed Project is anticipated to be completed by Year 2029. The proposed Project will be used by campus students and staff, and the current classes/programs/events that now occur on campus are expected to continue at the new facility. However, the new construction and renovation will result in a state-of-the-art Stadium and Athletic Sports Complex facility that would increase enrollment in classes/programs at those facilities. Current enrollment in classes associated with the facilities included in the Project is 842 students and is at 60% of the available capacity. The potential growth of student enrollment related to the Project includes the following conservative assumptions:

- The maximum growth estimate due to the improved facilities would be an increase of 35% enrollment in the current courses.
- The overall enrollment in those classes would increase up to 1,343 students from the existing 842 enrollment (i.e. resulting in a 501 student increase).

Therefore, this traffic study will evaluate an increase of 501 students that will be associated with the proposed Project.

2.1 Site Access

Vehicular access to the proposed Project would continue to be provided via various unsignalized access driveways located along Lew Davis Street, Conant Street, Faculty Avenue and Clark Avenue.

SOURCE: GOOGLE EARTH

KEY

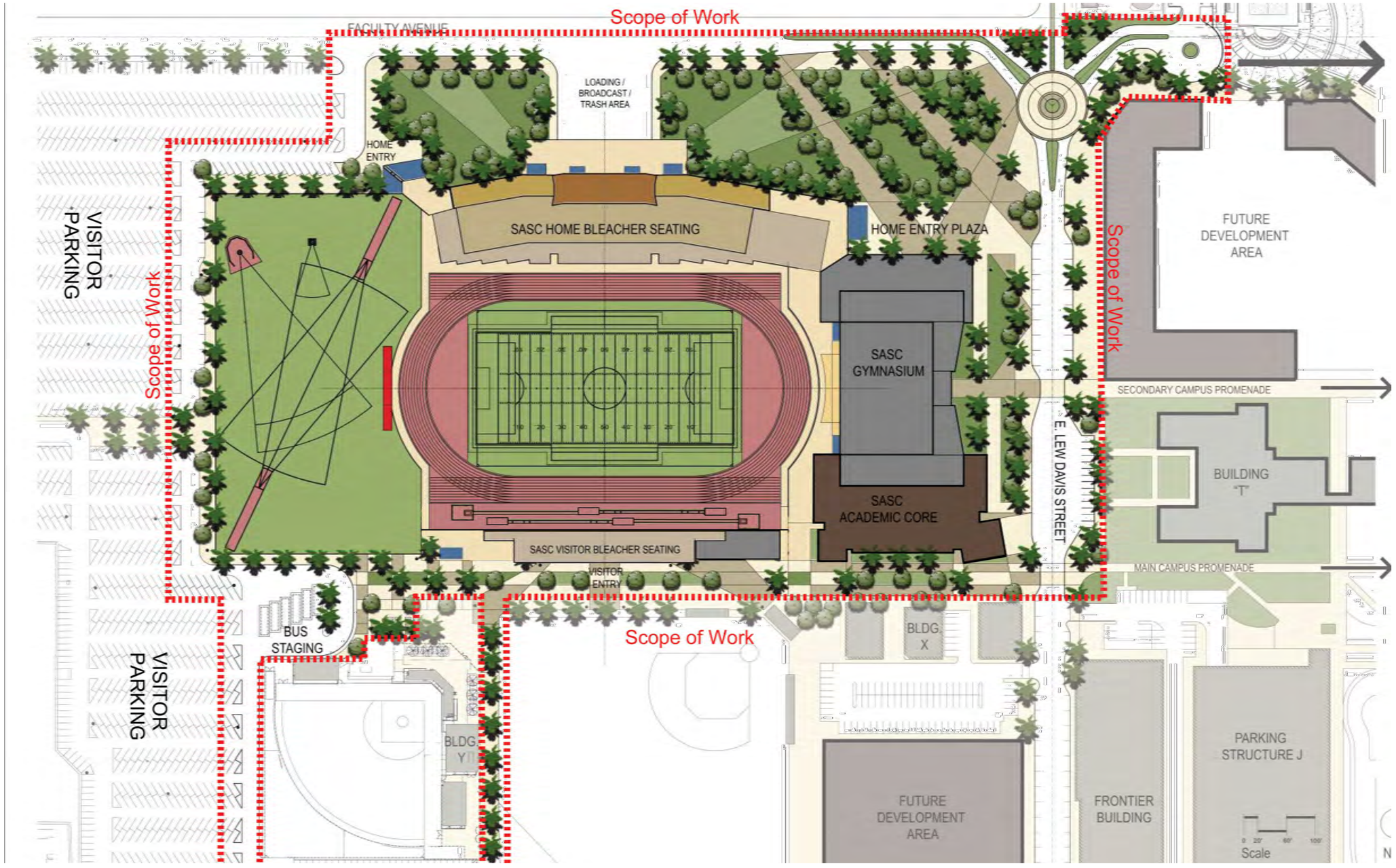
= PROJECT SITE

NO SCALE

FIGURE 2-1

EXISTING SITE AERIAL

LBCCD STADIUM AND ATHLETIC SPORTS COMPLEX, LONG BEACH



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LLG

N NO SCALE

FIGURE 2–2

PROPOSED SITE PLAN

LBCCD STADIUM AND ATHLETIC SPORTS COMPLEX, LONG BEACH

3.0 EXISTING CONDITIONS

3.1 Existing Street System

The principal local network of streets serving the project site includes Carson Street, Lakewood Boulevard, and Clark Avenue. The following discussion provides a brief synopsis of these key area streets. The descriptions are based on an inventory of existing roadway conditions.

Carson Street is generally a five-lane, divided roadway between Lakewood Boulevard and Bellflower Boulevard and is generally a six-lane divided roadway west of Lakewood Boulevard and east of Bellflower Boulevard. Carson Street is oriented in the east-west direction. The posted speed limit on Carson Street is 40 miles per hour (mph). On-street parking is generally not permitted along this roadway in the vicinity of the project, except on the north side of the roadway between Clark Avenue and Bellflower Boulevard. A traffic signal controls the study intersections of Carson Street at Lakewood Boulevard, Clark Avenue, and Bellflower Boulevard. The intersection of Carson Street at Faculty Avenue is a stop controlled.

Lakewood Boulevard is generally a six-lane divided roadway between Carson Street and Conant Street and generally an eight-lane divided roadway south of Conant Street. Lakewood Boulevard is oriented in the north-south direction. The posted speed limit on Lakewood Boulevard is 45 mph. On-street parking is not permitted on both sides of the roadway within the vicinity of the project. A traffic signal controls the study intersections of Lakewood Boulevard at Carson Street, Conant Street, and Wardlow Road.

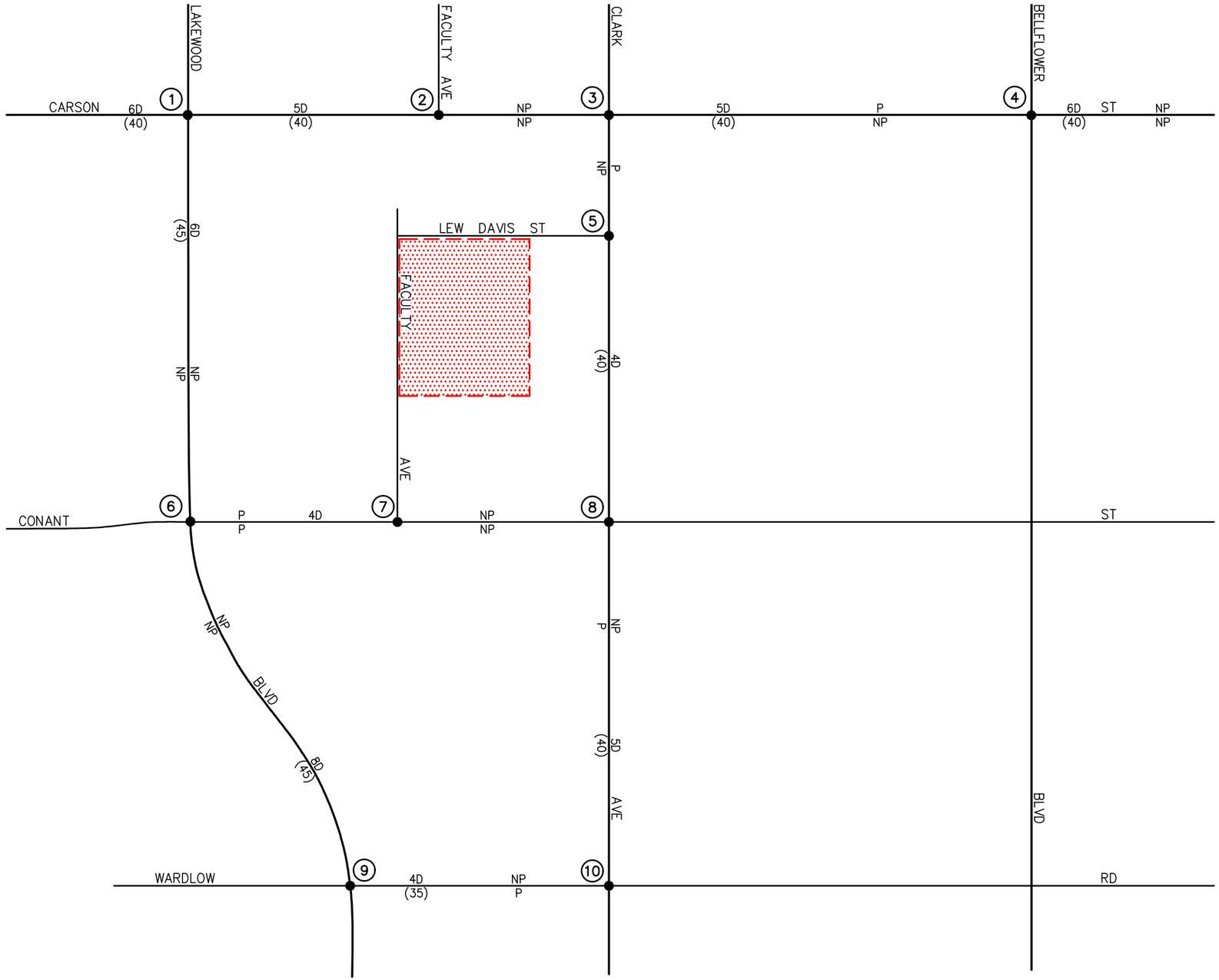
Clark Avenue is generally a four-lane divided roadway north of Conant Street and generally a five-lane divided roadway south of Conant Street. Clark Avenue is oriented in the north-south direction. The posted speed limit on Clark Avenue is 40 mph. On-street parking is generally permitted on the east side of the roadway north of Conant Street and generally permitted on the west side of the roadway south of Conant Street within the vicinity of the project. A traffic signal controls the study intersections of Clark Avenue at Carson Street, Lew Davis Street, Conant Street, and Wardlow Road.

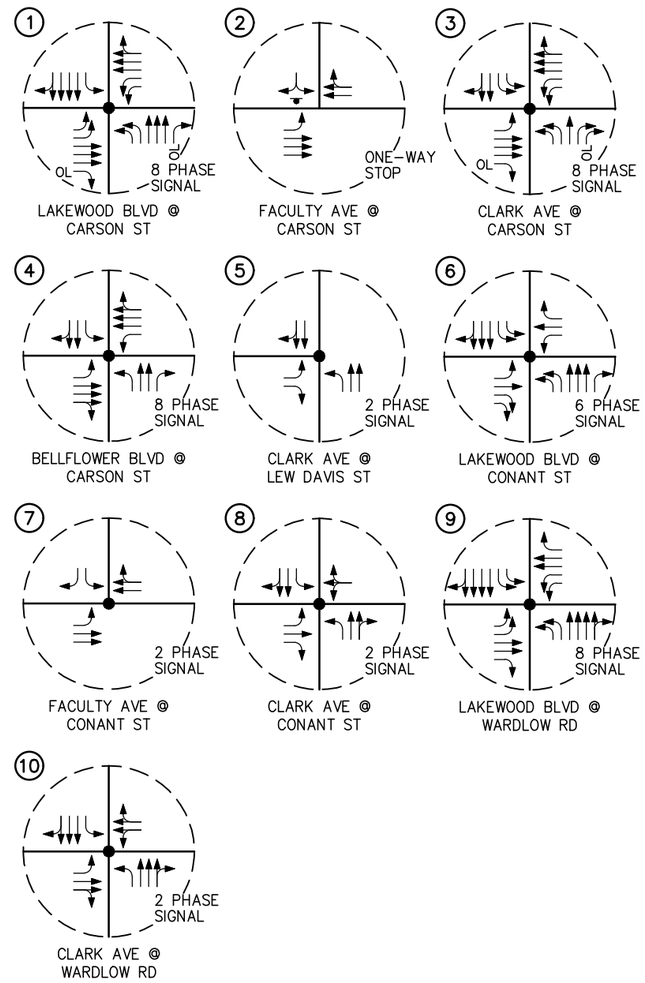
Figure 3-1 presents an inventory of the existing roadway conditions for the arterials and intersections evaluated in this report. The number of travel lanes and intersection controls for the key area intersections are identified.

3.2 Existing Traffic Volumes

Ten (10) key study intersections 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, and their analysis will reveal the potential need for Project-related circulation improvements.

Existing AM peak hour and PM peak hour traffic volumes for the ten (10) key study intersections evaluated in this report were obtained from manual peak hour turning movement counts conducted by *Transportation Studies, Inc.* in March 2024. ***Figures 3-2*** and ***3-3*** illustrate the existing AM and PM peak hour traffic volumes at the key study intersections evaluated in this report, respectively.





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LLG

N NO SCALE

KEY

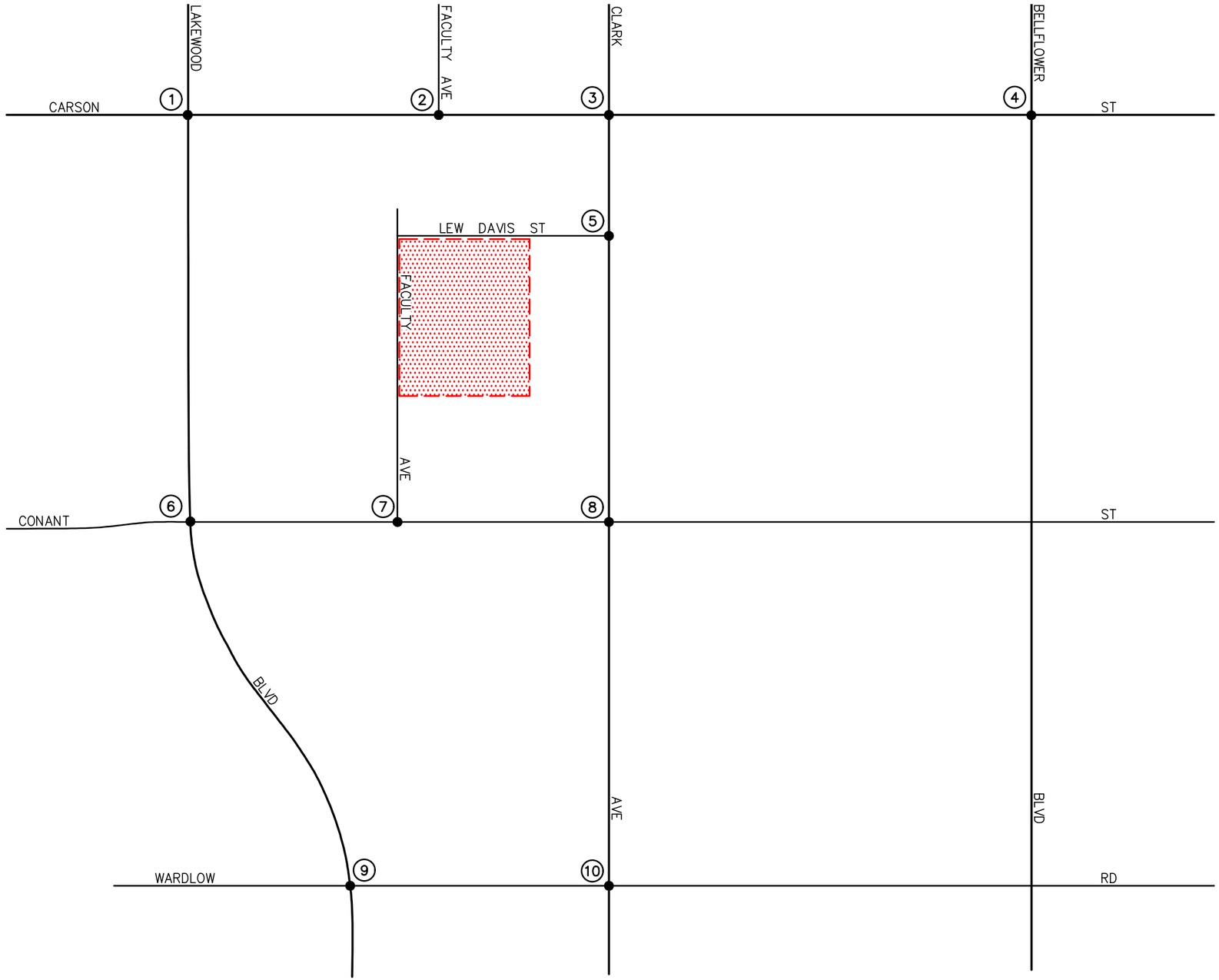
(#) = STUDY INTERSECTION
= APPROACH LANE ASSIGNMENT
● = TRAFFIC SIGNAL, ▼ = STOP SIGN
P = PARKING, NP = NO PARKING
= PROJECT SITE

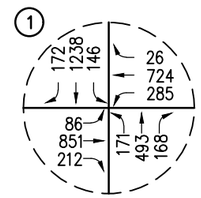
U = UNDIVIDED, D = DIVIDED
2 = NUMBER OF TRAVEL LANES
(XX)= POSTED SPEED LIMIT (MPH)
OL = OVERLAP

FIGURE 3-1

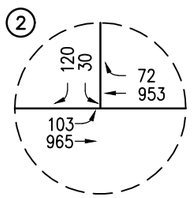
EXISTING ROADWAY CONDITIONS AND INTERSECTION CONTROLS

LBCCD STADIUM AND ATHLETIC SPORTS COMPLEX, LONG BEACH

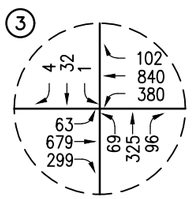




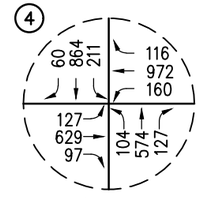
LAKEWOOD BLVD @ CARSON ST



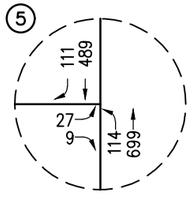
FACULTY AVE @ CARSON ST



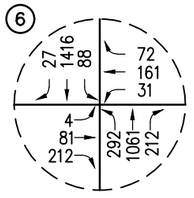
CLARK AVE @ CARSON ST



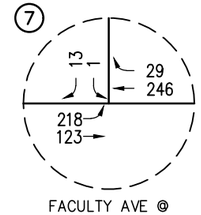
BELLFLOWER BLVD @ CARSON ST



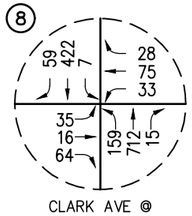
CLARK AVE @ LEW DAVIS ST



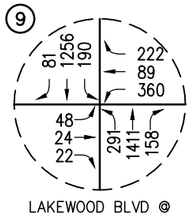
LAKEWOOD BLVD @ CONANT ST



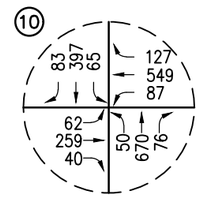
FACULTY AVE @ CONANT ST



CLARK AVE @ CONANT ST



LAKEWOOD BLVD @ WARDLOW RD



CLARK AVE @ WARDLOW RD

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N NO SCALE

KEY

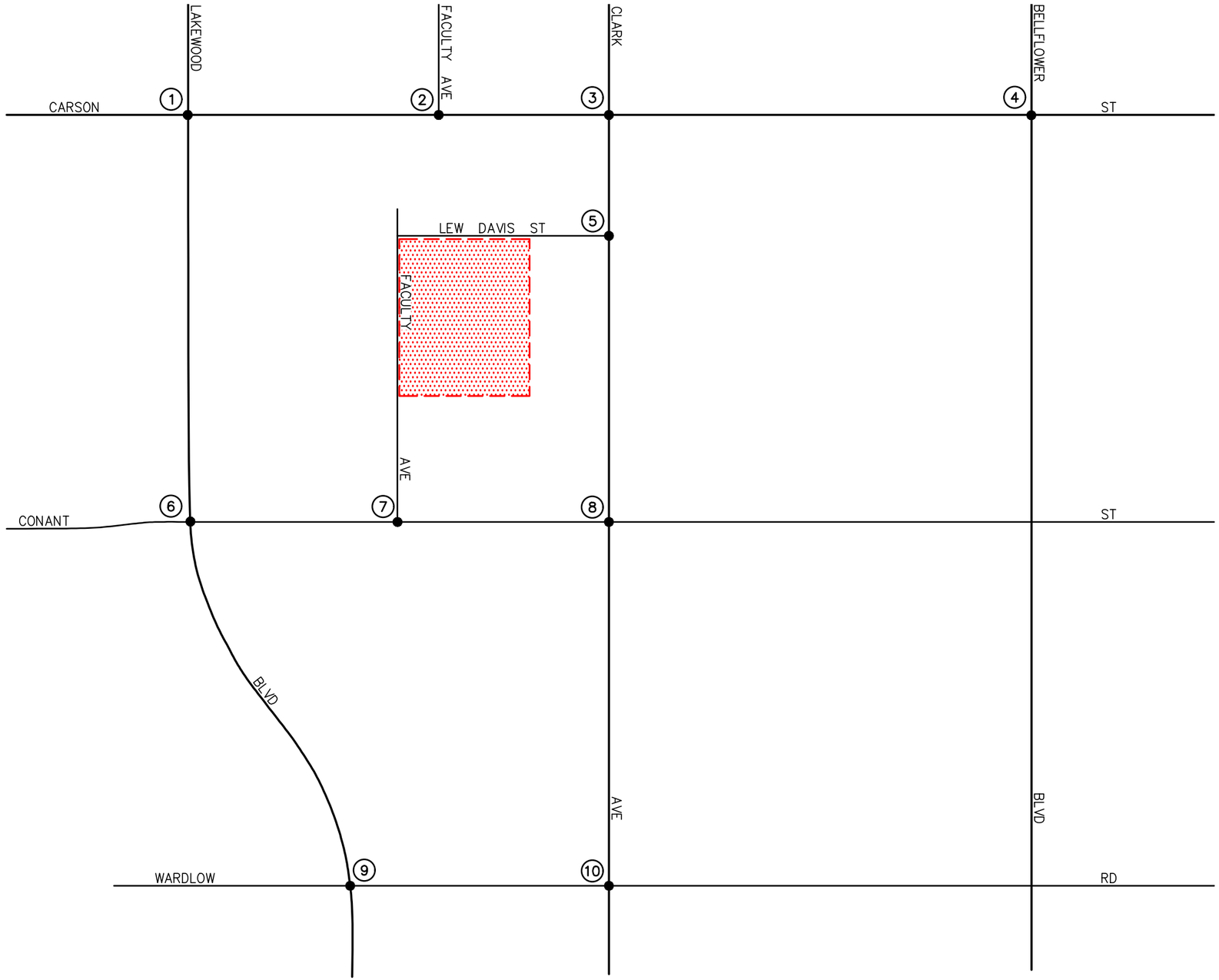
(#) = STUDY INTERSECTION

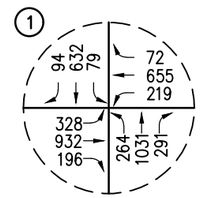
= PROJECT SITE

FIGURE 3-2

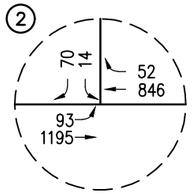
EXISTING AM PEAK HOUR TRAFFIC VOLUMES

LBCCD STADIUM AND ATHLETIC SPORTS COMPLEX, LONG BEACH

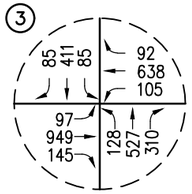




LAKEWOOD BLVD @ CARSON ST



FACULTY AVE @ CARSON ST



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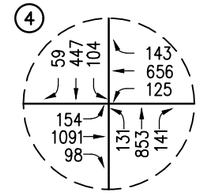
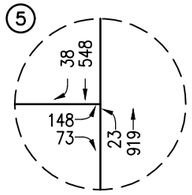
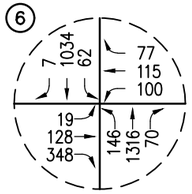


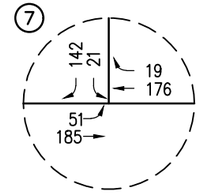
BELLFLOWER BLVD @ CARSON ST



CLARK AVE @ LEW DAVIS ST



LAKEWOOD BLVD @ CONANT ST



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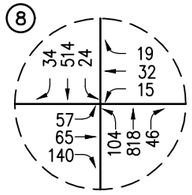

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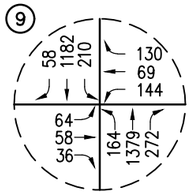
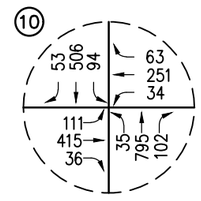


LAKEWOOD BLVD @ WARDLOW RD



CLARK AVE @ WARDLOW RD

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KEY

(#) = STUDY INTERSECTION

= PROJECT SITE

FIGURE 3-3

EXISTING PM PEAK HOUR TRAFFIC VOLUMES

LBCCD STADIUM AND ATHLETIC SPORTS COMPLEX, LONG BEACH

Appendix A contains the detailed peak hour count sheets for the key intersections evaluated in this report.

3.3 Existing Public Transit

Long Beach Transit (LBT) provides public transit services in the vicinity of the proposed Project. LBT bus routes within the vicinity of the project include Routes 91, 93, 101, 103, 111, and 112, which currently serve Lakewood Boulevard, Carson Street, Clark Avenue, Conant Street, Lew Davis Street, Wardlow Road, or Bellflower Boulevard. ***Figure 3-4*** graphically illustrates the transit routes of Long Beach Transit within the vicinity of the Project site. ***Figure 3-5*** presents the existing transit stop locations.

3.4 Existing Bicycle Master Plan

The City of Long Beach promotes bicycling as a means of mobility and a way in which to improve the quality of life within its community. The Bicycle Master Plan recognizes the needs of bicycle users and aims to create a complete and safe bicycle network throughout the City. The City of Long Beach Bicycle Master Plan is shown on ***Figure 3-6***.

Review of *Figure 3-6* indicates that the nearest existing and/or future bike lanes are located north, south, and east of the Project site, which includes a future Off-Street bike lane along Carson Street and existing Class II bike lanes along Bellflower Boulevard and Wardlow Road.

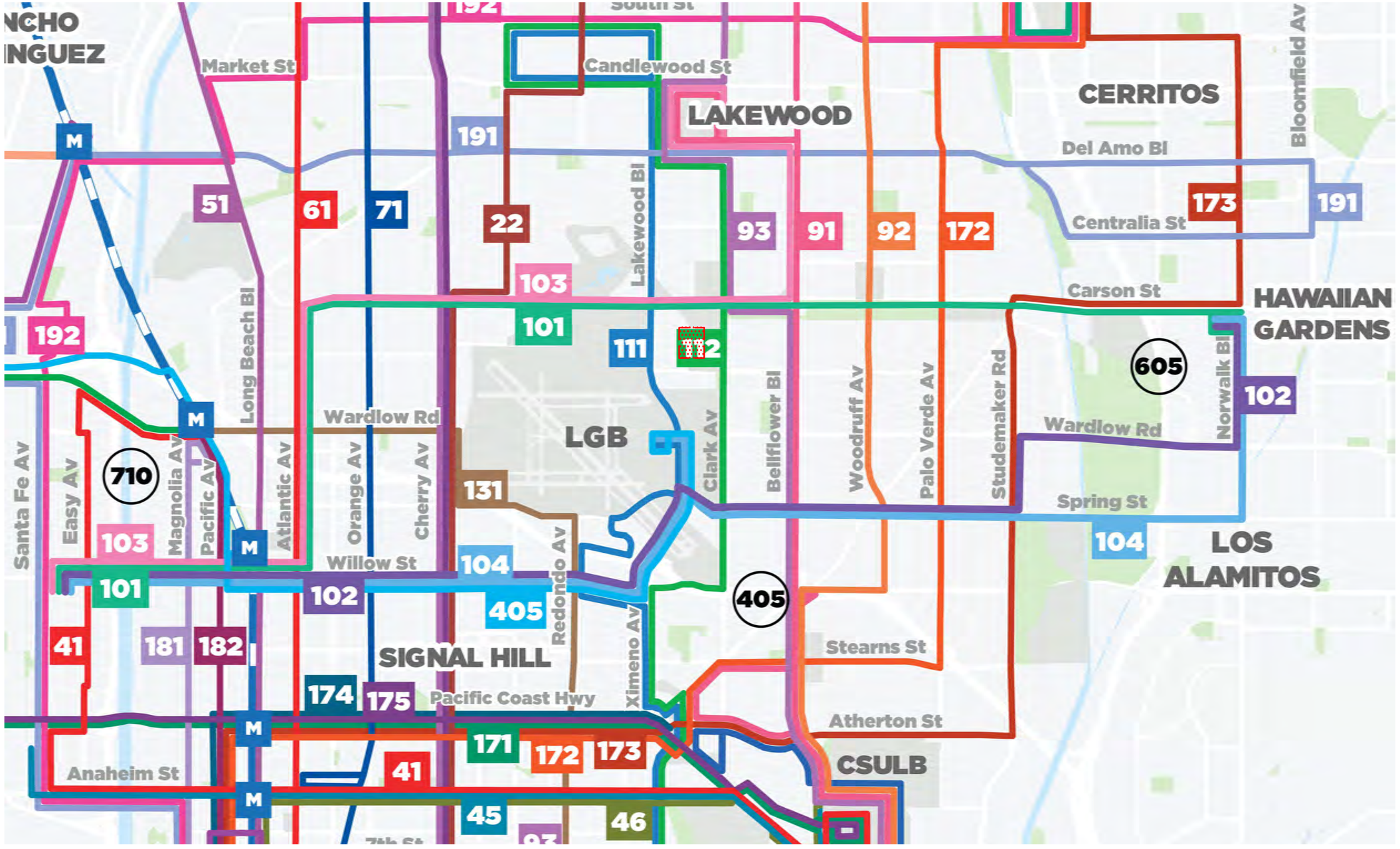
3.5 Existing Intersection Conditions

Pursuant to the City of Long Beach guidelines and in conformance with the City's Mobility Element, existing AM and PM peak hour operating conditions for the key signalized and unsignalized study intersections were evaluated using the *Highway Capacity Manual* (HCM) methodology.

3.5.1 *Highway Capacity Manual (HCM) Method of Analysis (Signalized Intersections)*

Existing weekday peak hour Levels of Service (LOS) for the key signalized study intersections were evaluated using the Highway Capacity Manual (HCM) method. Based on the HCM 7th Edition operations method of analysis, level of service for signalized intersections is defined in terms of control delay, which is a measure of driver discomfort, frustration, fuel consumption and lost travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, geometries, traffic and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during ideal conditions: in the absence of traffic control, in the absence of geometric delay, in the absence of any incidents and when there are no other vehicles on the road.

In the HCM, only the portion of total delay attributed to the control facility is quantified. This delay is called *control delay*. Control delay includes initial deceleration delay, queue move-up time, stopped delay and final acceleration delay. Specifically, LOS criteria for traffic signals are stated in terms of the average control delay per vehicle. The six qualitative categories of Level of Service that have been defined along with the corresponding HCM control delay value range for signalized intersections are shown in ***Table 3-1***.



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N NO SCALE

SOURCE: LBT

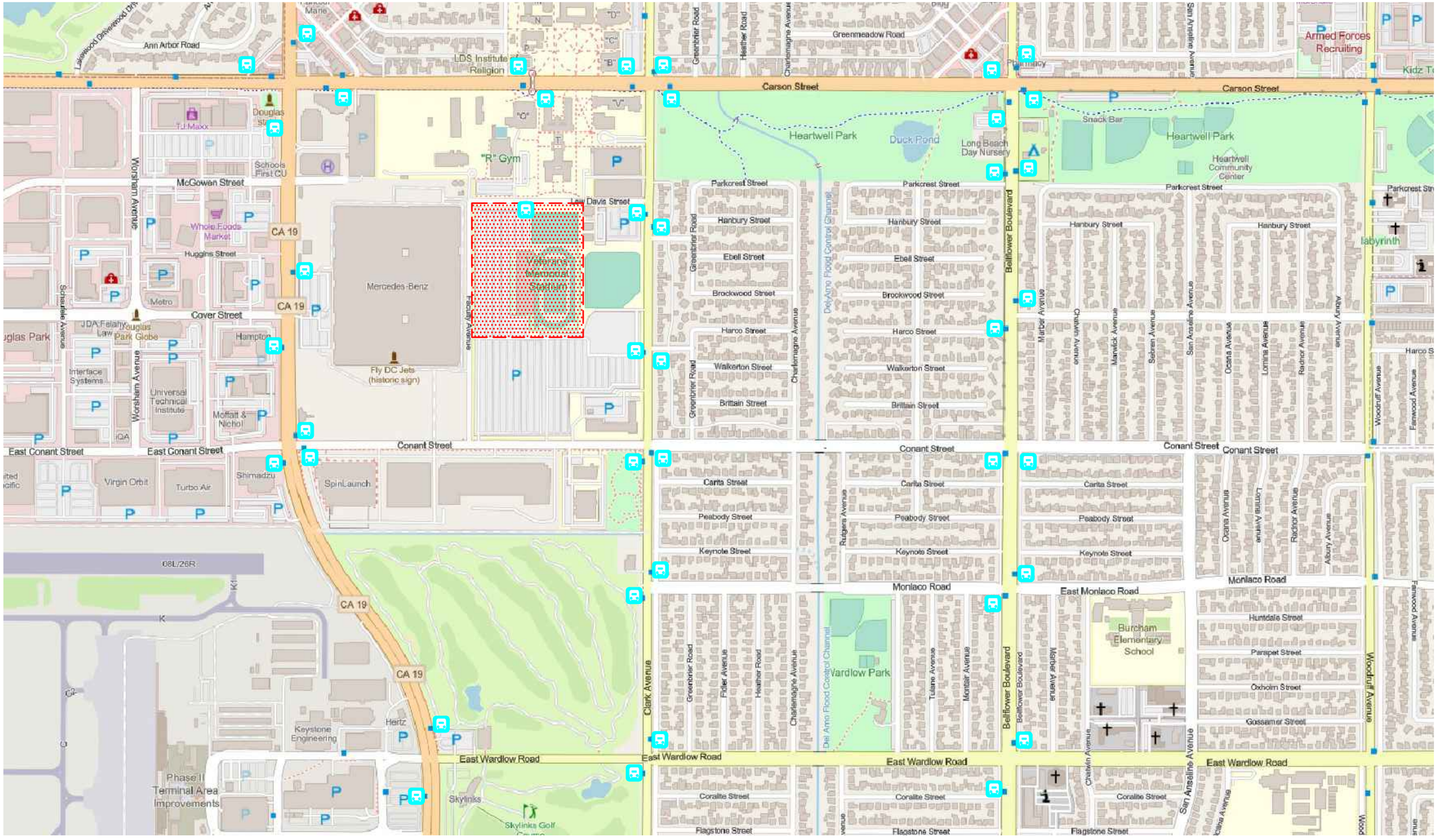
KEY

= PROJECT SITE

FIGURE 3-4

LONG BEACH TRANSIT MAP

LBCCD STADIUM AND ATHLETIC SPORTS COMPLEX, LONG BEACH



SOURCE: OPEN STREETS

KEY

= PROJECT SITE

= TRANSIT STOP

NO SCALE

FIGURE 3–5

TRANSIT STOP LOCATIONS

LBCCD STADIUM AND ATHLETIC SPORTS COMPLEX, LONG BEACH

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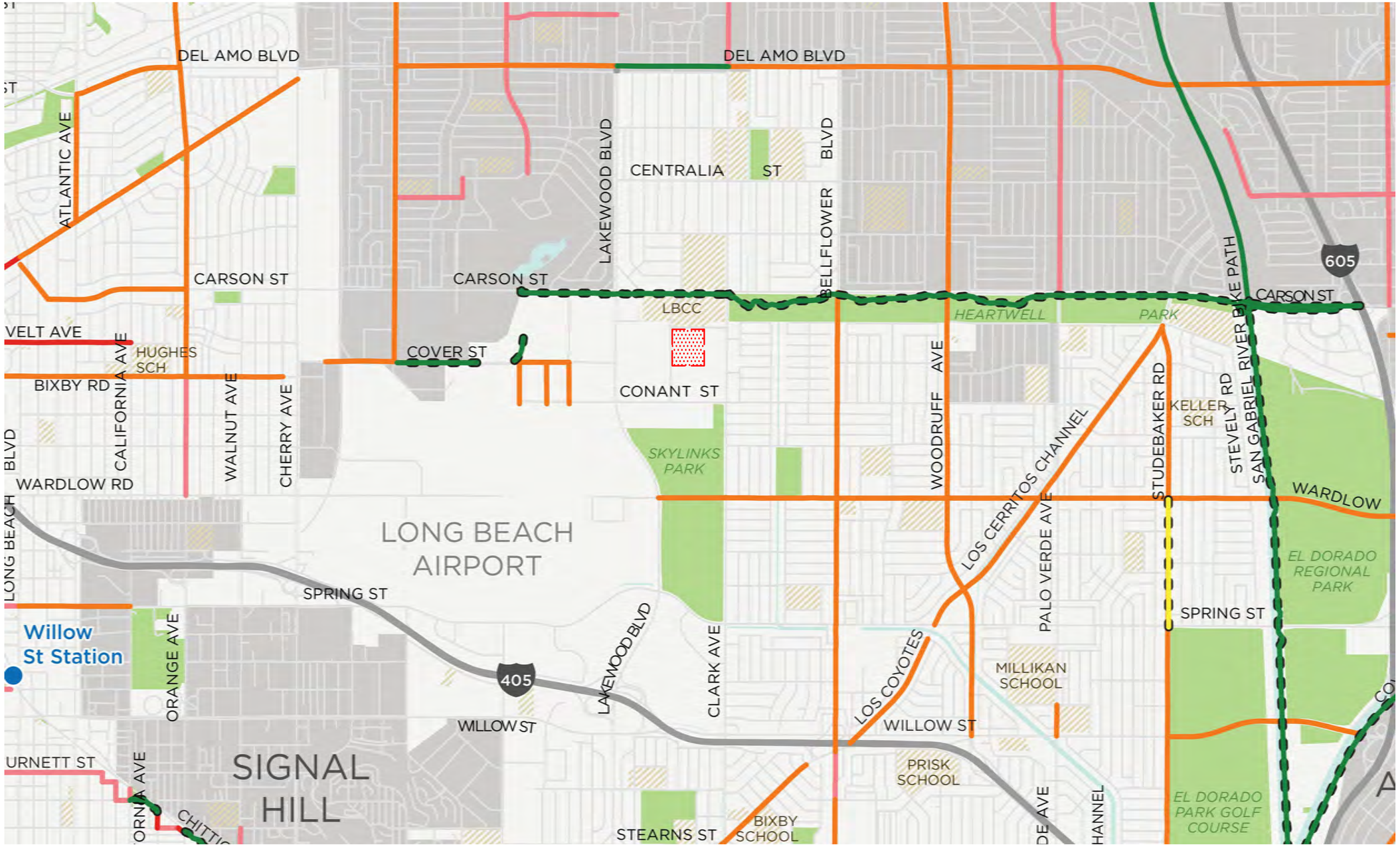

SOURCE: CITY OF LONG BEACH

KEY

- Shared-Use Path (Class I)
- Bicycle Lane (Class II)
- Bicycle Boulevard (Class III-A)
- Bicycle Route (Class III-B and III-C)
- Sharrow (Class III)
- Separated Bikeway (Class IV)

Existing 8-to-80 Bikeway

- Off Street (Exclusive Right-of-Way)
- On Street (Major Street)
- Bicycle Boulevard (Residential Street)
- = PROJECT SITE

LLG

N NO SCALE

FIGURE 3–6

LONG BEACH BICYCLE MASTER PLAN

LBCCD STADIUM AND ATHLETIC SPORTS COMPLEX, LONG BEACH

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3.5.2 *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. This methodology estimates the average control delay for each of the subject movements and determines the level of service for each movement. For all-way stop controlled intersections, the overall average control delay measured in seconds per vehicle, and level of service is then calculated for the entire intersection. For one-way and two-way stop-controlled (minor street stop-controlled) intersections, this methodology estimates the worst side street delay, measured in seconds per vehicle and determines the level of service for that approach. The HCM control delay value translates to a Level of Service (LOS) estimate, which is a relative measure of the intersection performance. The six qualitative categories of Level of Service have been defined along with the corresponding HCM control delay value range, as shown in ***Table 3-2***.

3.5.3 *Level of Service Criteria*

According to the City of Long Beach, LOS D is the minimum acceptable condition that should be maintained during the peak commute hours, or the current LOS if the existing LOS is worse than LOS D (i.e. LOS E of F).

3.6 Existing Level of Service Results

Table 3-3 summarizes the existing peak hour service level calculations for the ten (10) key study intersections based on existing traffic volumes and current street geometrics. Review of *Table 3-3* indicates that all of the key study intersections currently operate at LOS D or better during the weekday AM and PM peak hours.

Appendix B presents the Existing peak hour HCM/LOS calculation worksheets for the ten (10) key study intersections

TABLE 3-1

LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS (HCM)[1]

Level of Service (LOS)	Control Delay Per Vehicle (seconds/vehicle)	Level of Service Description
A	$\leq$ 10.0	This level of service occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
B	> 10.0 and $\leq$ 20.0	This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of average delay.
C	> 20.0 and $\leq$ 35.0	Average traffic delays. These higher delays may result from fair progression, longer cycle lengths, or both. 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.
D	> 35.0 and $\leq$ 55.0	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 the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	> 55.0 and $\leq$ 80.0	Very long traffic delays. This level is considered by many agencies (i.e. SANBAG) 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 occurrences.
F	$\geq$ 80.0	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.

[1] Source: *Highway Capacity Manual* (Signalized Intersections).

TABLE 3-2

LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS (HCM)[2]

Level of Service (LOS)	Highway Capacity Manual Delay Value (sec/veh)	Level of Service Description
A	≤ 10.0	Little or no delay
B	> 10.0 and ≤ 15.0	Short traffic delays
C	> 15.0 and ≤ 25.0	Average traffic delays
D	> 25.0 and ≤ 35.0	Long traffic delays
E	> 35.0 and ≤ 50.0	Very long traffic delays
F	> 50.0	Severe congestion

[2] Source: *Highway Capacity Manual 7th Edition*, Chapter 20 (Two-Way Stop Control).

TABLE 3-3

EXISTING (YEAR 2024) PEAK HOUR INTERSECTION CAPACITY ANALYSIS SUMMARY

Key Intersection		Time Period	Control Type	Delay (s/v)	LOS
1.	Lakewood Boulevard at Carson Street	AM	8∅ Traffic Signal	34.8	C
		PM		35.9	D
2.	Faculty Avenue at Carson Street	AM	One-way Stop	28.4	D
		PM		17.4	C
3.	Clark Avenue at Carson Street	AM	8∅ Traffic Signal	28.4	C
		PM		30.2	C
4.	Bellflower Boulevard at Carson Street	AM	8∅ Traffic Signal	37.1	D
		PM		32.1	C
5.	Clark Avenue at Lew Davis Street	AM	2∅ Traffic Signal	2.6	A
		PM		8.4	A
6.	Lakewood Boulevard at Conant Street	AM	6∅ Traffic Signal	20.7	C
		PM		20.4	C
7.	Faculty Avenue at Conant Street	AM	2∅ Traffic Signal	2.2	A
		PM		14.0	B
8.	Clark Avenue at Conant Street	AM	2∅ Traffic Signal	9.5	A
		PM		10.2	B
9.	Lakewood Boulevard at Wardlow Road	AM	8∅ Traffic Signal	29.7	C
		PM		20.2	C
10.	Clark Avenue at Wardlow Road	AM	2∅ Traffic Signal	17.7	B
		PM		15.4	B

Notes:

- LOS = Level of Service, please refer to *Tables 3-1* and *3-2* for the LOS definitions
- ∅ = Phase
- 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 effect of the project is isolated by comparing operational (LOS) conditions at selected key 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 11th Edition of *Trip Generation Manual*, published by the Institute of Transportation Engineers (ITE) [Washington D.C., 2021].

Table 5-1 summarizes the trip generation rates used in forecasting the vehicular trips generated by the proposed Project and presents the forecast daily and peak hour project traffic volumes for a "typical" weekday. As shown in the upper portion of *Table 5-1*, the trip generation potential for the proposed Project was estimated using ITE Land Use 540: Junior/Community College trip rates.

A review of the lower portion of *Table 5-1* indicates that the proposed Project is forecast to generate approximately 576 daily trips, with 55 trips (45 inbound, 10 outbound) produced in the AM peak hour and 55 trips (31 inbound, 24 outbound) produced in the PM peak hour on a "typical" weekday. The potential effect of these net additional trips are assessed in the traffic study.

5.2 Traffic Impact Analysis Requirements

Based on the *City of Long Beach Traffic Impact Analysis Guidelines, dated June 2020*, the City requires a traffic impact analysis be prepared for "any project in Long Beach that is expected to generate 500 or more net new daily trips, including both inbound and outbound trips". Therefore, based on the City's guidelines, the potential traffic impact of the Project's added trips as noted above and in *Table 5-1* has been prepared.

5.3 Project Traffic Distribution and Assignment

Figure 5-1 illustrates the general, directional traffic distribution pattern for the proposed Project. Project traffic volumes both entering and exiting the project site have been distributed and assigned to the adjacent street system based on the following considerations:

- location of site access points in relation to the surrounding street system,
- the site's proximity to major traffic carriers and regional access routes,
- physical characteristics of the circulation system such as lane channelization and presence of traffic signals that affect travel patterns, and
- ingress/egress availability at the project site, plus parking layout and allocation within the subject property.

The anticipated AM and PM peak hour traffic volumes associated with the proposed Project are presented in ***Figures 5-2*** and ***5-3,*** respectively. The traffic volume assignments presented in *Figures 5-2* and *5-3* reflect the traffic distribution characteristics shown in *Figure 5-1* and the traffic generation forecast presented in *Table 5-1*.

TABLE 5-1

PROJECT TRAFFIC GENERATION RATES AND FORECAST[3]

Project Description	Daily 2-Way	AM Peak Hour			PM Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total
Trip Generation Rates:							
▪ 540: Junior/Community College (TE/Student)	1.15	81%	19%	0.11	56%	44%	0.11
Proposed Project:							
▪ LBCCD Stadium and Athletic Sports Complex (501 Students)	576	45	10	55	31	24	55

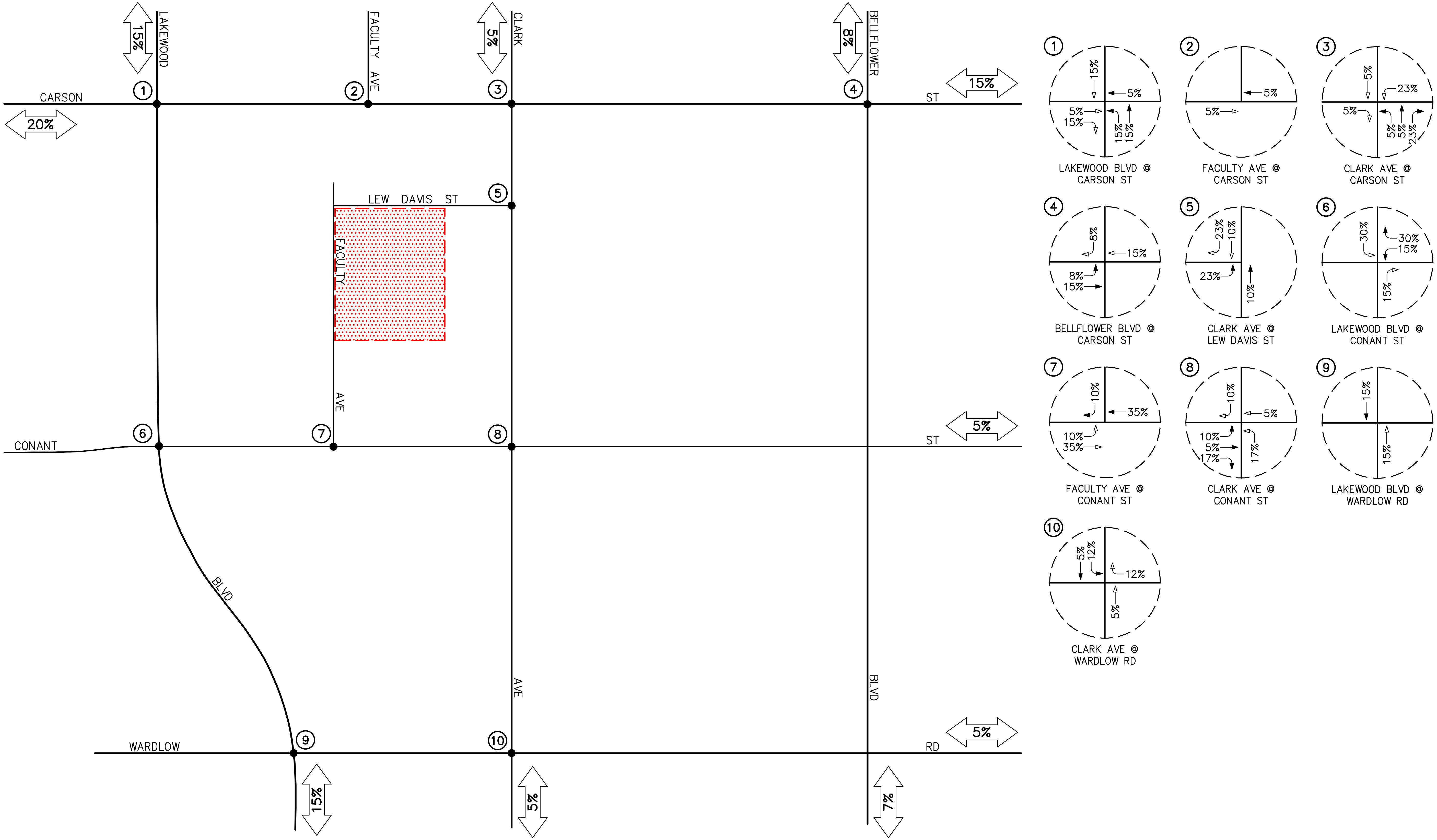
Notes:
TE/Student = Trip ends per student

[3] Source: *Trip Generation*, 11th Edition, Institute of Transportation Engineers (ITE), Washington, D.C. (2021).

5.4 Existing Plus Project Traffic Conditions

The Existing Plus Project traffic conditions have been generated based upon existing conditions and the estimated project traffic. These forecast traffic conditions have been prepared to assess if circulation enhancements would be necessary to offset the effect of added Project-related traffic upon the circulation system as it currently exists. This traffic volume scenario and the related intersection capacity analyses will identify the roadway improvements necessary to accommodate the Project, if any.

Figures 5-4 and ***5-5*** present projected AM and PM peak hour traffic volumes at the ten (10) key study intersections with the addition of the trips generated by the proposed Project to existing traffic volumes, respectively.



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NO SCALE

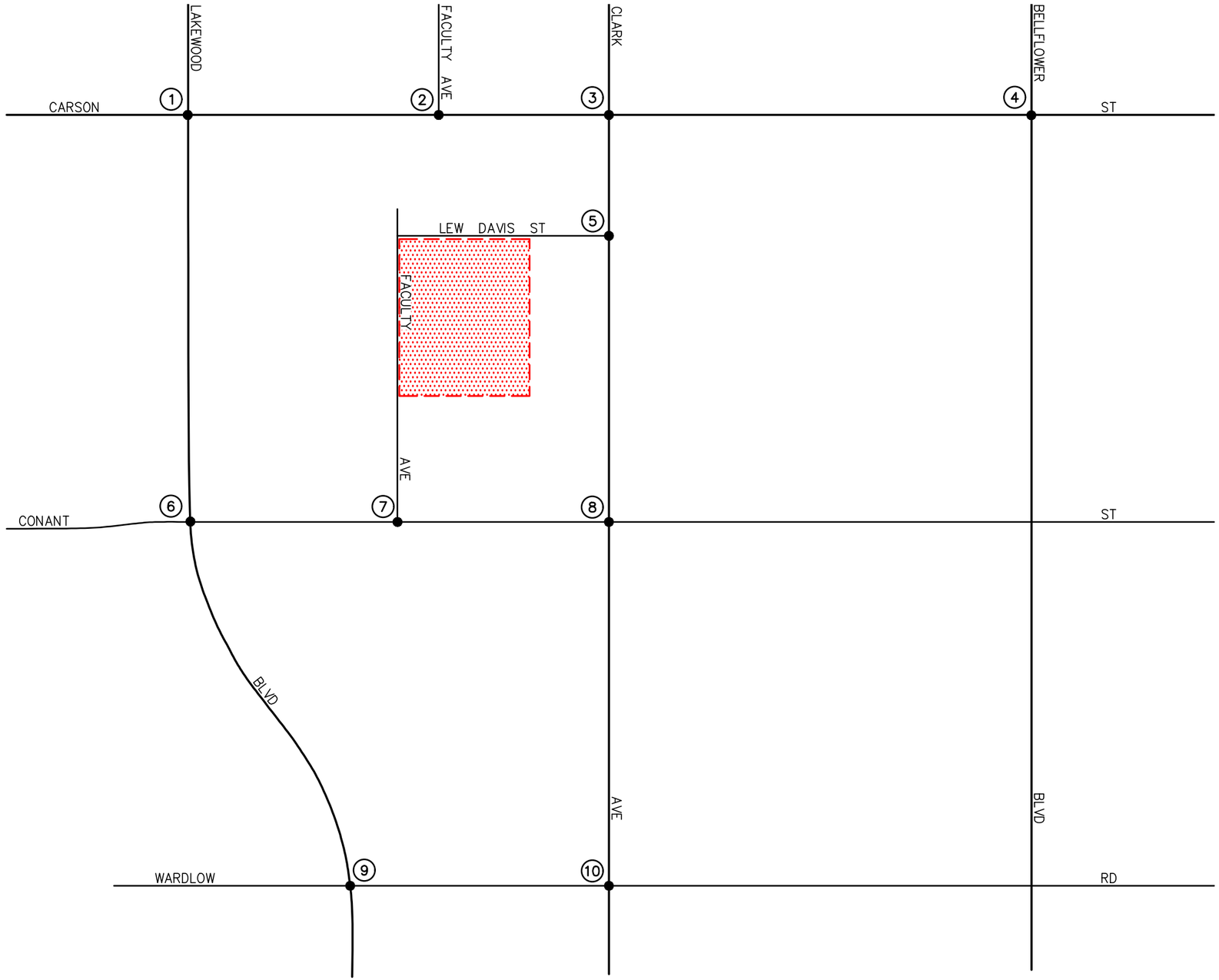
KEY

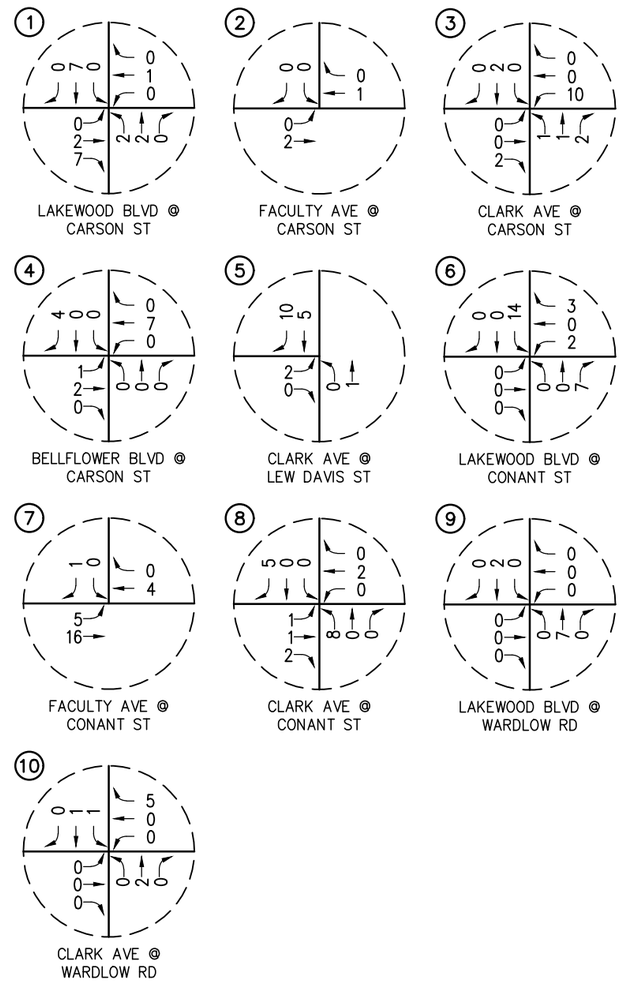
- (#) = STUDY INTERSECTION
- = INBOUND PERCENTAGE
- = OUTBOUND PERCENTAGE
- = PROJECT SITE

FIGURE 5-1

PROJECT TRAFFIC DISTRIBUTION PATTERN

LBCCD STADIUM AND ATHLETIC SPORTS COMPLEX, LONG BEACH





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KEY

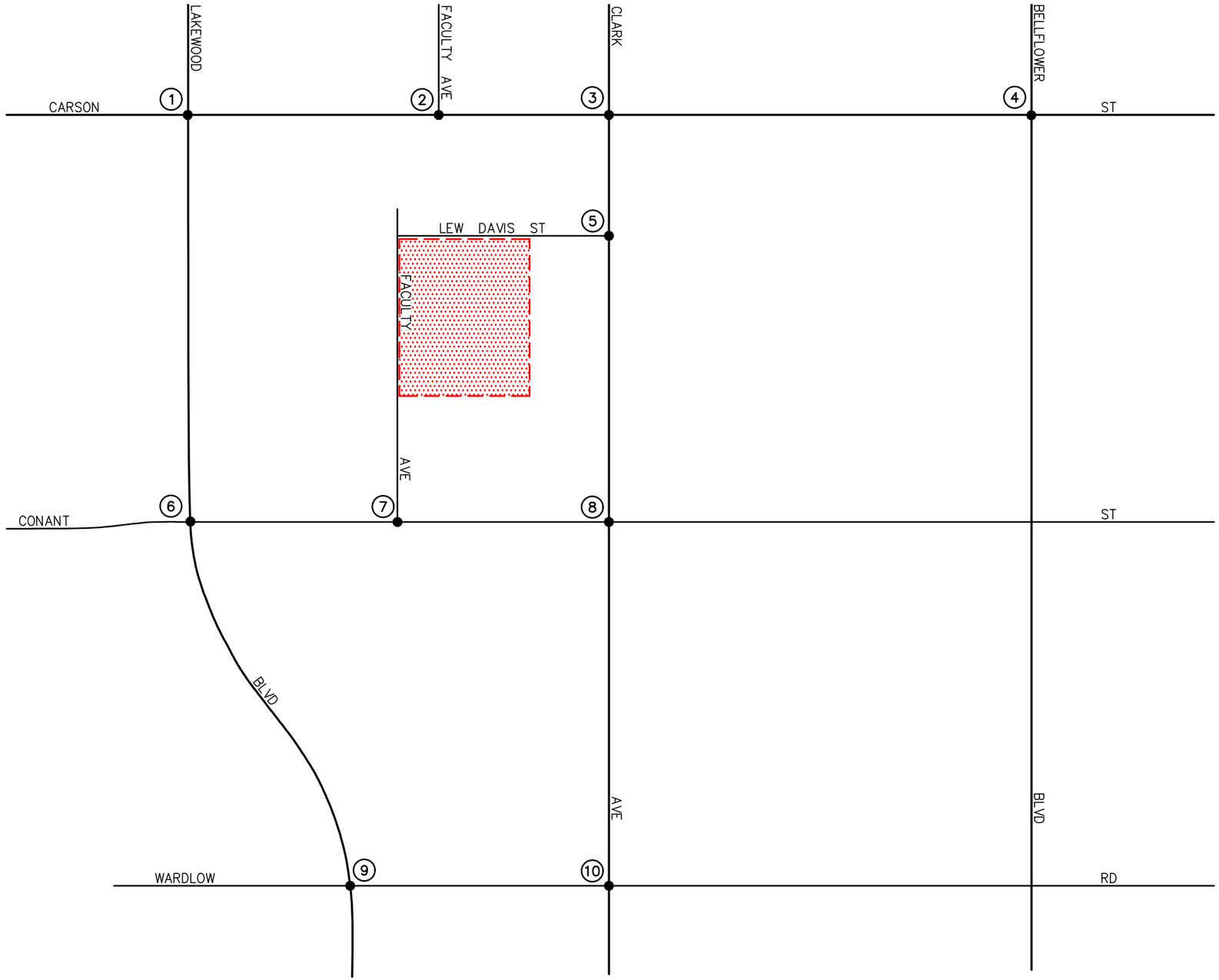
(#) = STUDY INTERSECTION

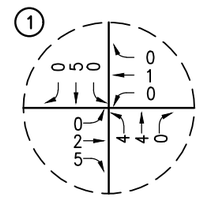
= PROJECT SITE

FIGURE 5-2

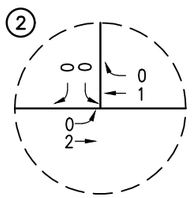
AM PEAK HOUR PROJECT TRAFFIC VOLUMES

LBCCD STADIUM AND ATHLETIC SPORTS COMPLEX, LONG BEACH





LAKEWOOD BLVD @ CARSON ST



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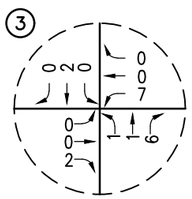
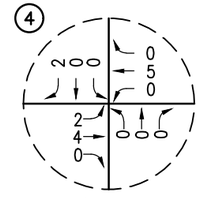
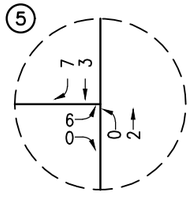


CLARK AVE @ CARSON ST



BELLFLOWER BLVD @ CARSON ST



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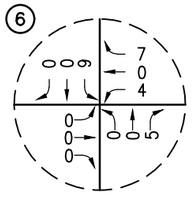
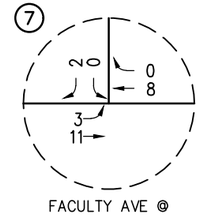
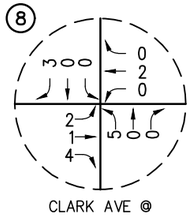


LAKEWOOD BLVD @ CONANT ST



FACULTY AVE @ CONANT ST



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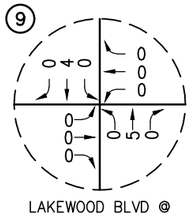

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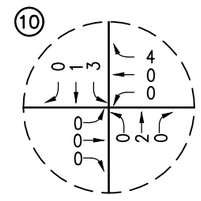

CLARK AVE @ WARDLOW RD

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N NO SCALE

KEY

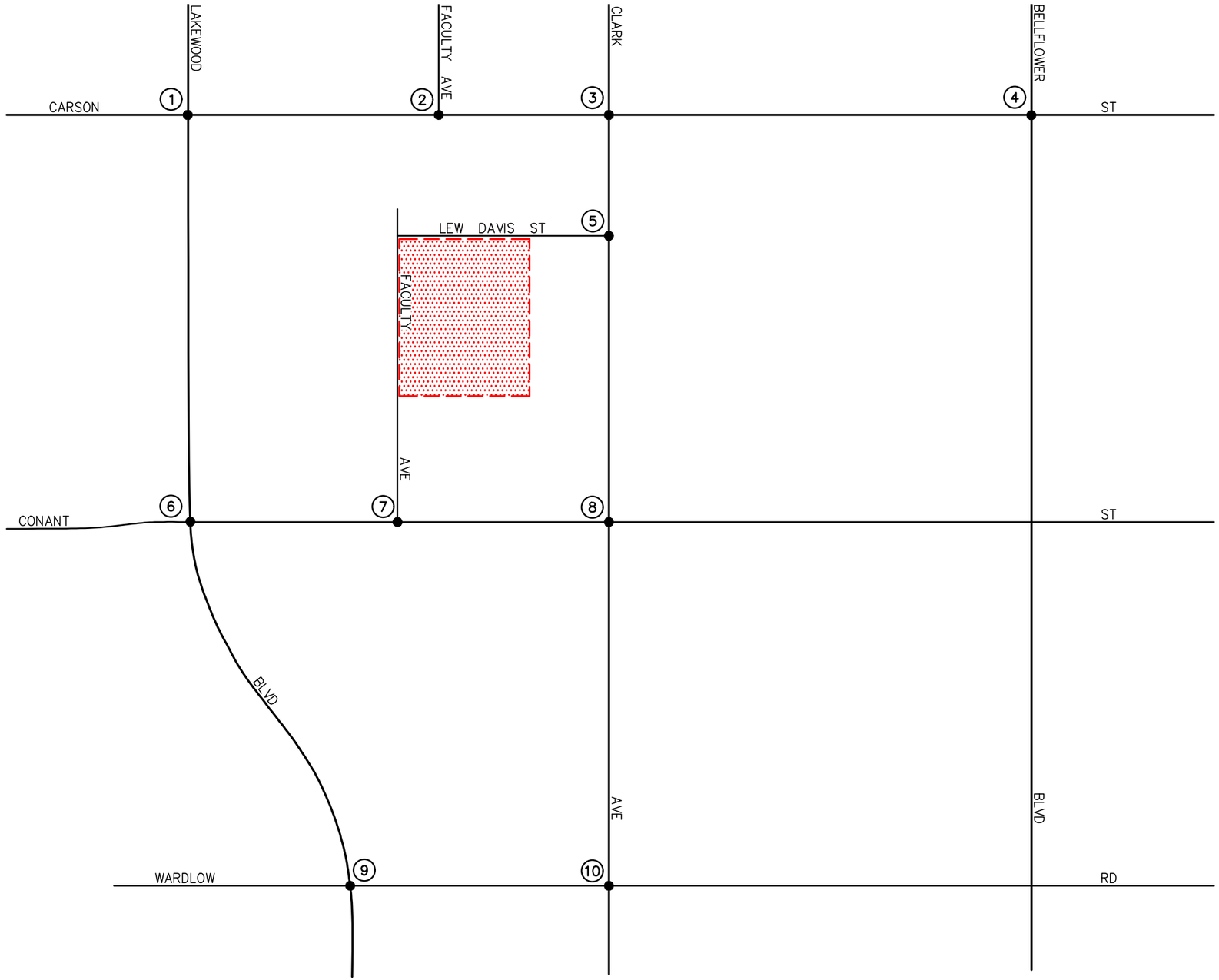
(#) = STUDY INTERSECTION

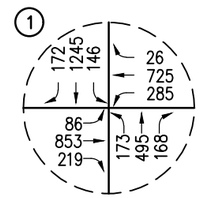
= PROJECT SITE

FIGURE 5-3

PM PEAK HOUR PROJECT TRAFFIC VOLUMES

LBCCD STADIUM AND ATHLETIC SPORTS COMPLEX, LONG BEACH





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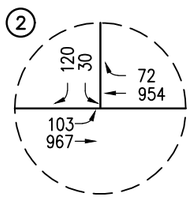

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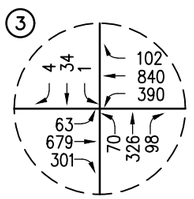

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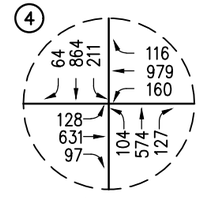

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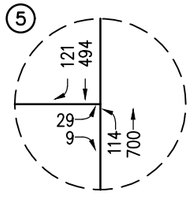

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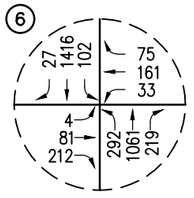

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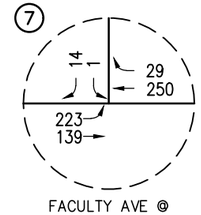

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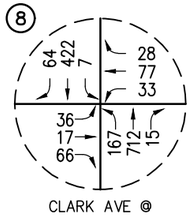

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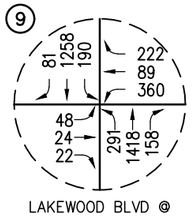

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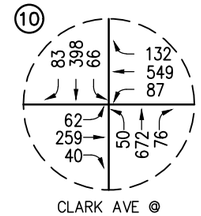

CLARK AVE @ WARDLOW RD

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N NO SCALE

KEY

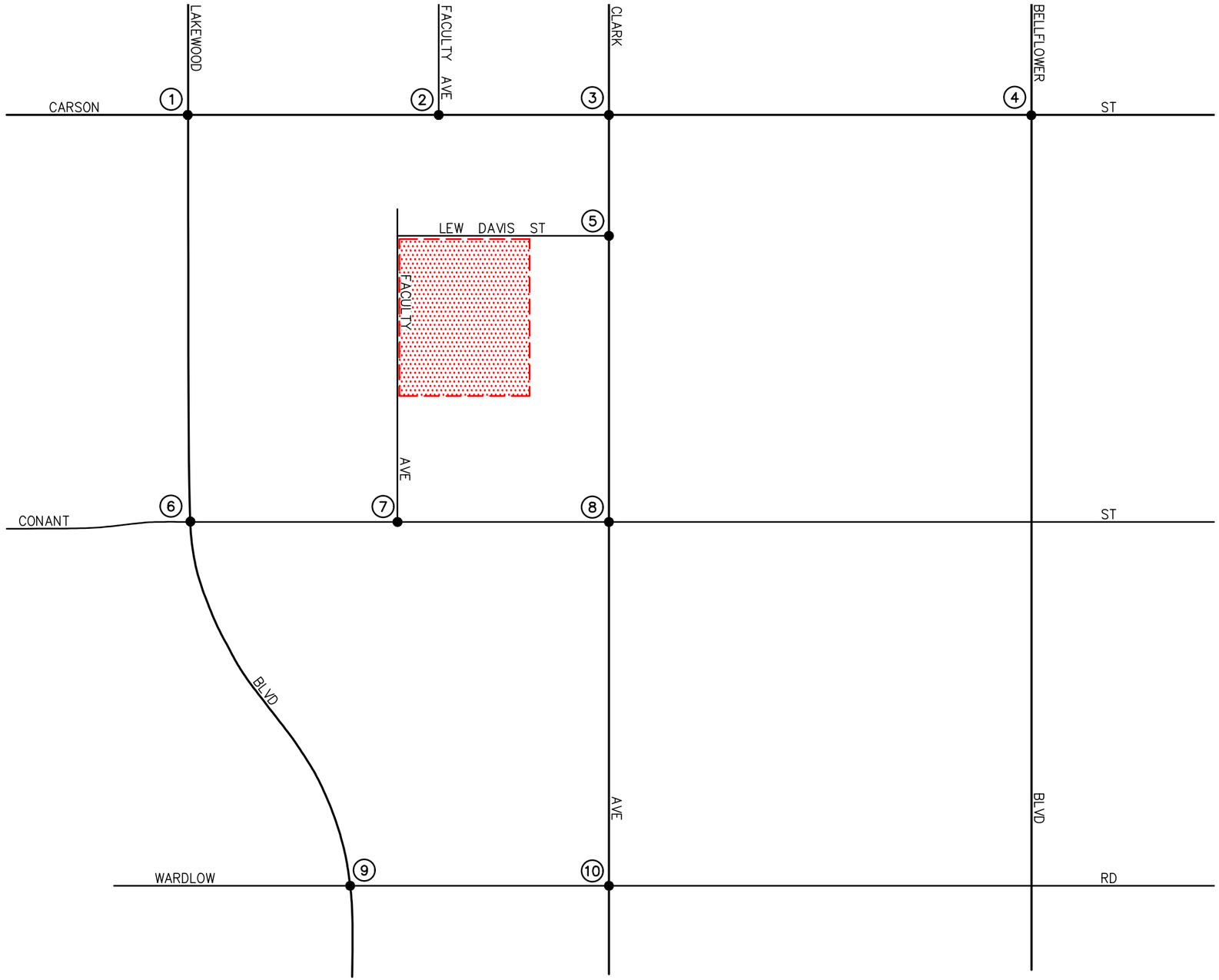
(#) = STUDY INTERSECTION

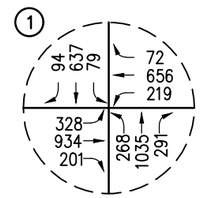
= PROJECT SITE

FIGURE 5-4

EXISTING PLUS PROJECT AM PEAK HOUR TRAFFIC VOLUMES

LBCCD STADIUM AND ATHLETIC SPORTS COMPLEX, LONG BEACH





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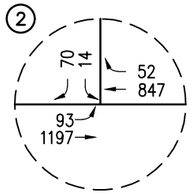
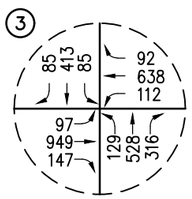


FACULTY AVE @ CARSON ST



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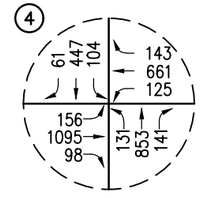
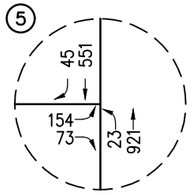
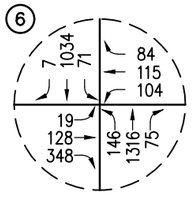


BELLFLOWER BLVD @ CARSON ST



CLARK AVE @ LEW DAVIS ST



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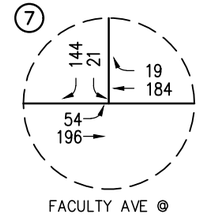

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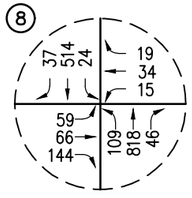

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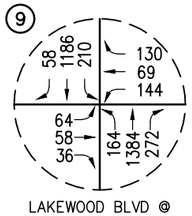

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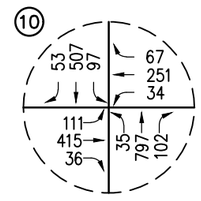

CLARK AVE @ WARDLOW RD

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N NO SCALE

KEY

(#) = STUDY INTERSECTION

= PROJECT SITE

FIGURE 5-5

EXISTING PLUS PROJECT PM PEAK HOUR TRAFFIC VOLUMES

LBCCD STADIUM AND ATHLETIC SPORTS COMPLEX, LONG BEACH

6.0 FUTURE TRAFFIC CONDITIONS

6.1 Ambient Traffic Growth

Cumulative traffic growth estimates have been calculated using an ambient growth factor. The ambient traffic growth factor is intended to include unknown and future cumulative 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 1% per year. Applied to existing Year 2024 traffic volumes results in a 5% increase of growth in existing volumes to near-term horizon Year 2029.

6.2 Cumulative 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 (cumulative projects) that are anticipated to produce trips and are located within a 2 mile radius of the proposed Project has been researched at the City of Long Beach and the City of Lakewood. With this information, the potential impact of the proposed Project can be evaluated within the context of the cumulative impact of all ongoing development. Based on our research, there are three (3) cumulative projects in the City of Long Beach and eight (8) cumulative projects in the City of Lakewood. The traffic analysis assumes that all of these cumulative projects will be developed at their proposed size and density and operational when the proposed Project is operational. This is the most conservative, worst-case approach, since the exact timing of each cumulative project is uncertain. In addition these cumulative projects would likely be, or have been, subject to improvements and/or reduced in size, which could reduce potential circulation effects. Under this analysis, however, those improvements and/or reductions are not considered. These eleven (11) cumulative projects have been included as part of the cumulative background setting. ***Table 6-1*** provides the location and a brief description for each of the eleven (11) cumulative projects. ***Figure 6-1*** graphically illustrates the location of the cumulative projects. These cumulative projects are expected to generate vehicular traffic, which may affect the operating conditions of the key study intersections.

Table 6-2 presents the development totals and resultant trip generation for the eleven (11) cumulative projects. As shown in *Table 6-2*, the eleven (11) cumulative projects are expected to generate a combined total of 4,218 daily trips, 464 AM peak hour trips (367 inbound and 97 outbound) and 494 PM peak hour trips (134 inbound and 360 outbound) on a typical weekday. The AM and PM peak hour traffic volumes associated with the eleven (11) cumulative projects are presented in ***Figures 6-2*** and ***6-3,*** respectively.

6.3 Year 2029 Traffic Volumes

Figures 6-4 and ***6-5*** present the AM and PM peak hour near-term cumulative traffic volumes at the ten (10) key study intersections for the Year 2029, respectively. Please note that the cumulative traffic volumes represent the accumulation of existing traffic, ambient growth traffic and cumulative projects traffic. ***Figures 6-6*** and ***6-7*** illustrate Year 2029 forecast AM and PM peak hour traffic volumes with the addition of trips generated by the proposed Project, respectively.

TABLE 6-1
LOCATION AND DESCRIPTION OF CUMULATIVE PROJECTS[4]

No.	Cumulative Project	Location/Address	Description
City of Long Beach			
1.	SPR 21-013	4400 Cherry Ave.	14,192 SF Community mausoleum
2.	SPR23-050	3605 Spring Street	7,000 SF Aircraft hangar demolition 63,820 SF Hanger complex construction 9,960 SF Office space construction
3.	SPR22-008, CUP22-04, & LLA21-004	3340 Los Coyotes Diagonal	86 DU Senior assisted care building
City of Lakewood			
4.	WRD Maintenance Facility	2601 Cover Street	7,239 SF Industrial
5.	Harbor Hyundai – New service building	3770 Cherry Avenue	3,995 SF Automobile Service Building
6.	Pacific Point West – 3420 Conant	3420 Conant Street	226,000 SF Industrial
7.	Pacific Point West – 3440 Conant	3440 Conant Street	152,000 SF Industrial
8.	Sender One	4949 Lakewood Blvd.	28,850 SF Rock Climbing Gym
9.	The Drive	3100 Carson Street	67,652 SF Industrial 8,209 SF Retail
10.	Sunshine Skate Center	4661 Silva Street	33,400 Indoor Recreation
11.	America's Tire Store	4771 Candlewood Street	7,680 SF Commercial

Notes:

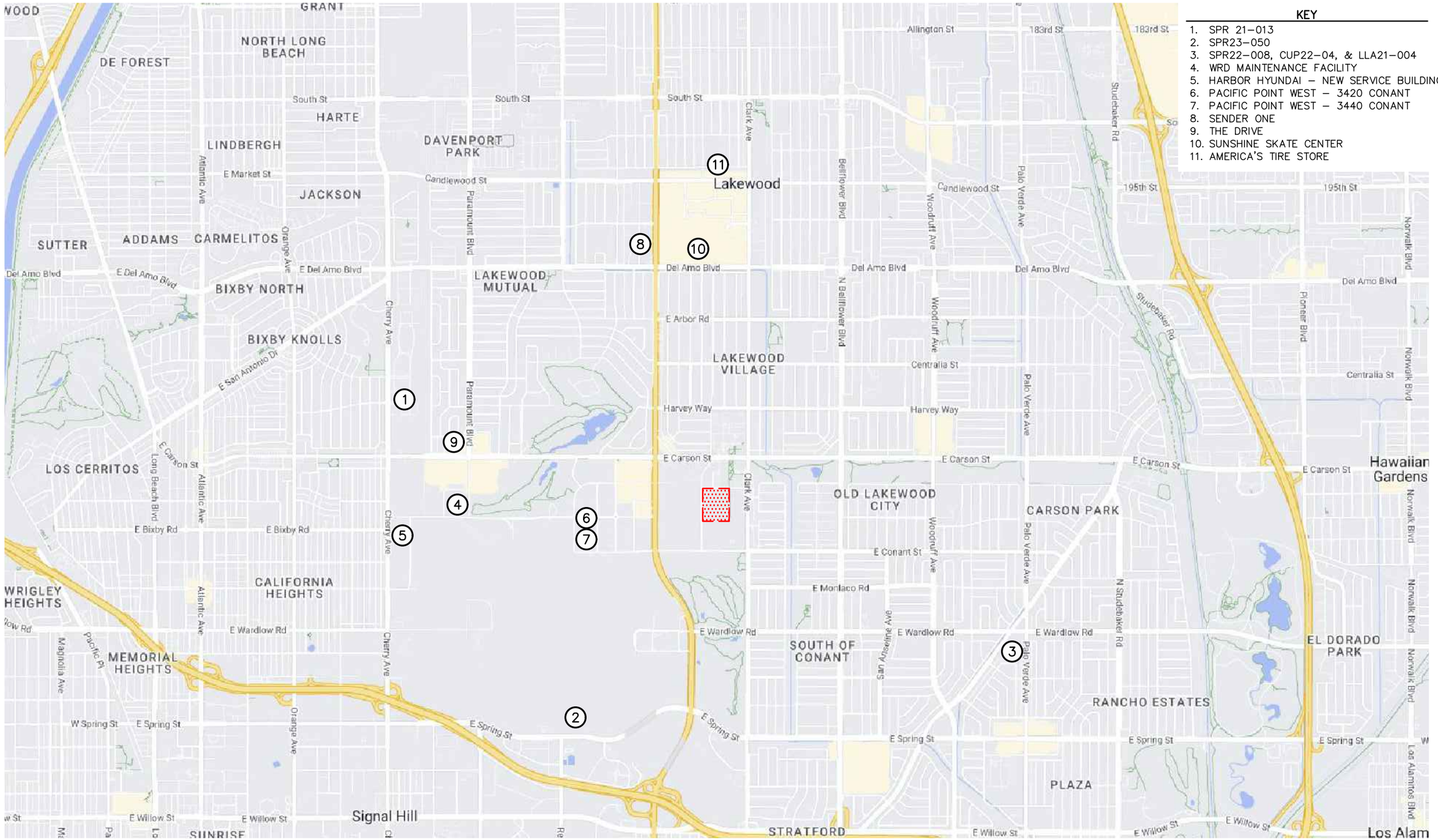
- SF = Square-feet
- DU = Dwelling units
- VFP = Vehicle Fueling Positions

[4] Source: City of Long Beach Planning Department and City of Lakewood Planning Department.

TABLE 6-2
CUMULATIVE PROJECTS TRAFFIC GENERATION FORECAST[5]

Cumulative Project Description	Daily 2-Way	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
1. SPR 21-013	2	0	0	0	0	0	0
2. SPR23-050	217	21	5	26	5	20	25
3. SPR22-008, CUP22-04, & LLA21-004	224	9	6	15	8	13	21
4. WRD Maintenance Facility	35	4	1	5	1	4	5
5. Harbor Hyundai – New service building	66	6	2	8	3	5	8
6. Pacific Point West – 3420 Conant	1,101	147	20	167	21	126	147
7. Pacific Point West – 3440 Conant	740	99	13	112	14	85	99
8. Sender One	470	13	27	40	27	20	47
9. The Drive	731	54	13	67	22	54	76
10. Sunshine Skate Center	440	2	4	6	24	20	44
11. America's Tire Store	192	12	6	18	9	13	22
Cumulative Projects Total Trip Generation Potential	**4,218**	**367**	**97**	**464**	**134**	**360**	**494**

[5] Source: *Trip Generation*, 11th Edition, Institute of Transportation Engineers (ITE), Washington, D.C. (2021).



SOURCE: GOOGLE

KEY

(#) = CUMULATIVE PROJECT LOCATION

= PROJECT SITE

NO SCALE

FIGURE 6–1

LOCATION OF CUMULATIVE PROJECTS

LBCCD STADIUM AND ATHLETIC SPORTS COMPLEX, LONG BEACH

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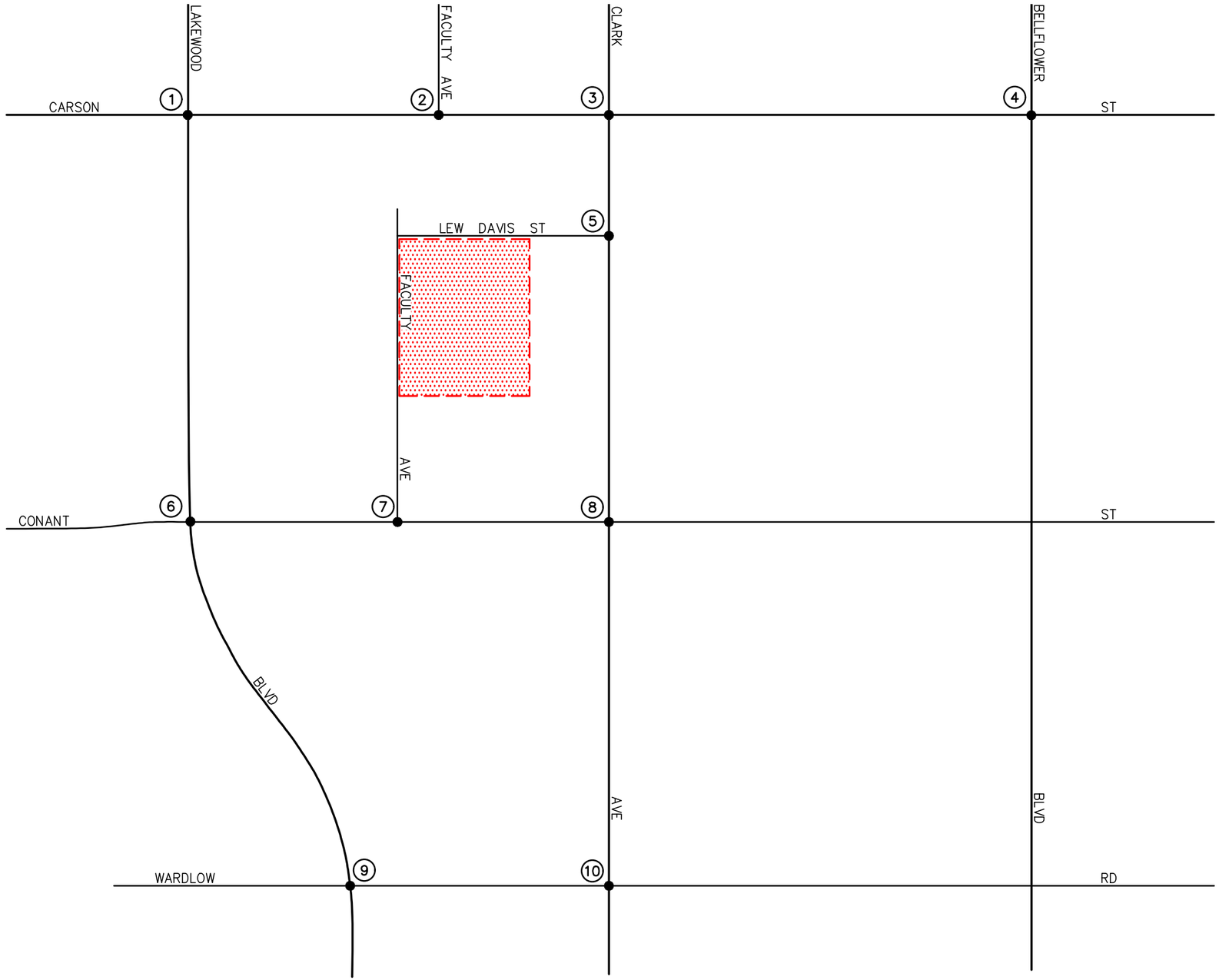

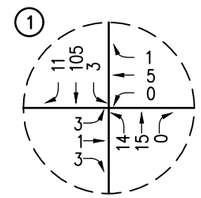

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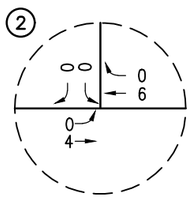
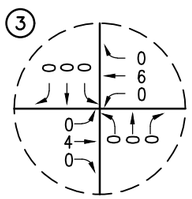


2 FACULTY AVE @ CARSON ST



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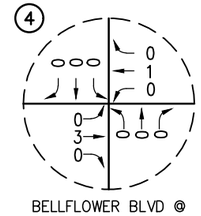
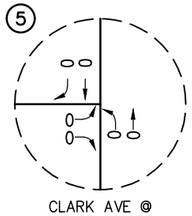
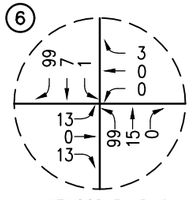


4 BELLFLOWER BLVD @ CARSON ST



5 CLARK AVE @ LEW DAVIS ST



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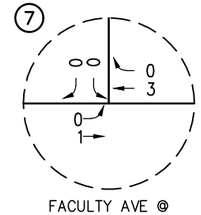

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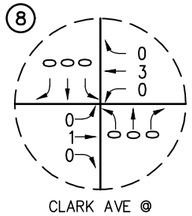

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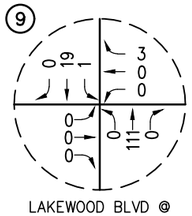
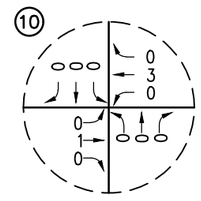


9 LAKEWOOD BLVD @ WARDLOW RD



10 CLARK AVE @ WARDLOW RD

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N NO SCALE

KEY

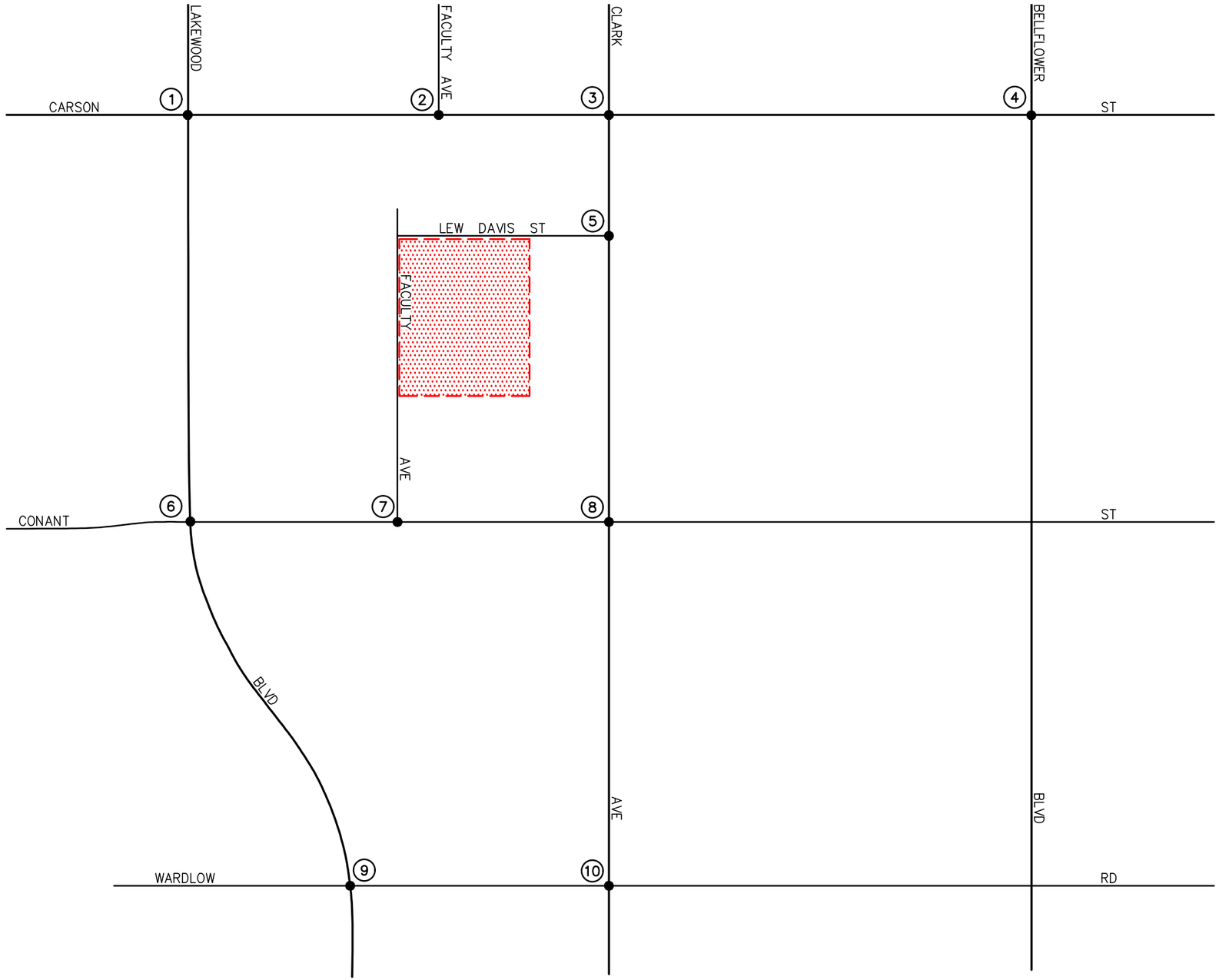
(#) = STUDY INTERSECTION

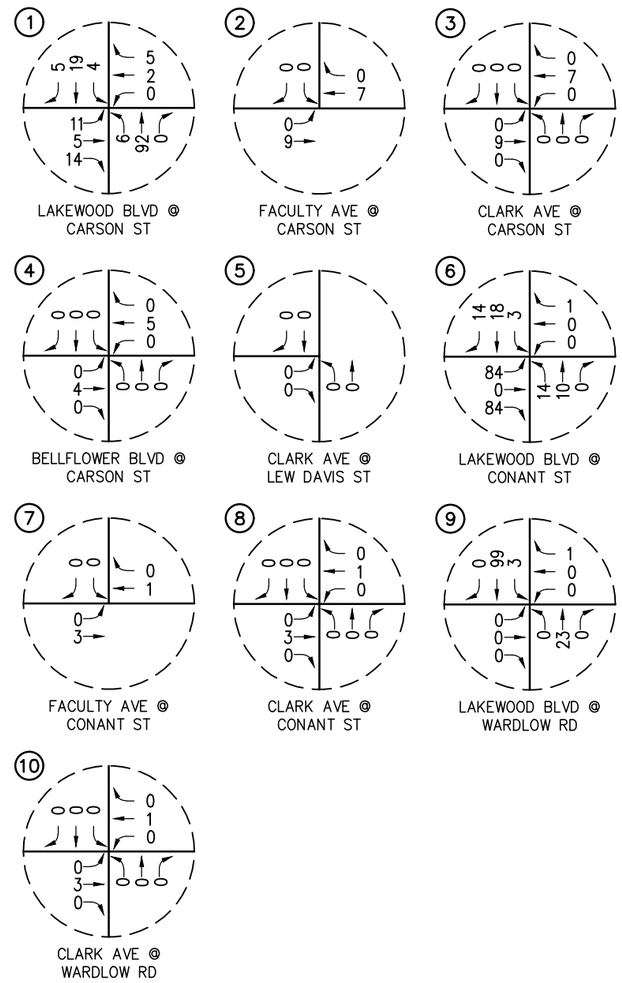
= PROJECT SITE

FIGURE 6-2

AM PEAK HOUR CUMULATIVE PROJECT TRAFFIC VOLUMES

LBCCD STADIUM AND ATHLETIC SPORTS COMPLEX, LONG BEACH





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KEY

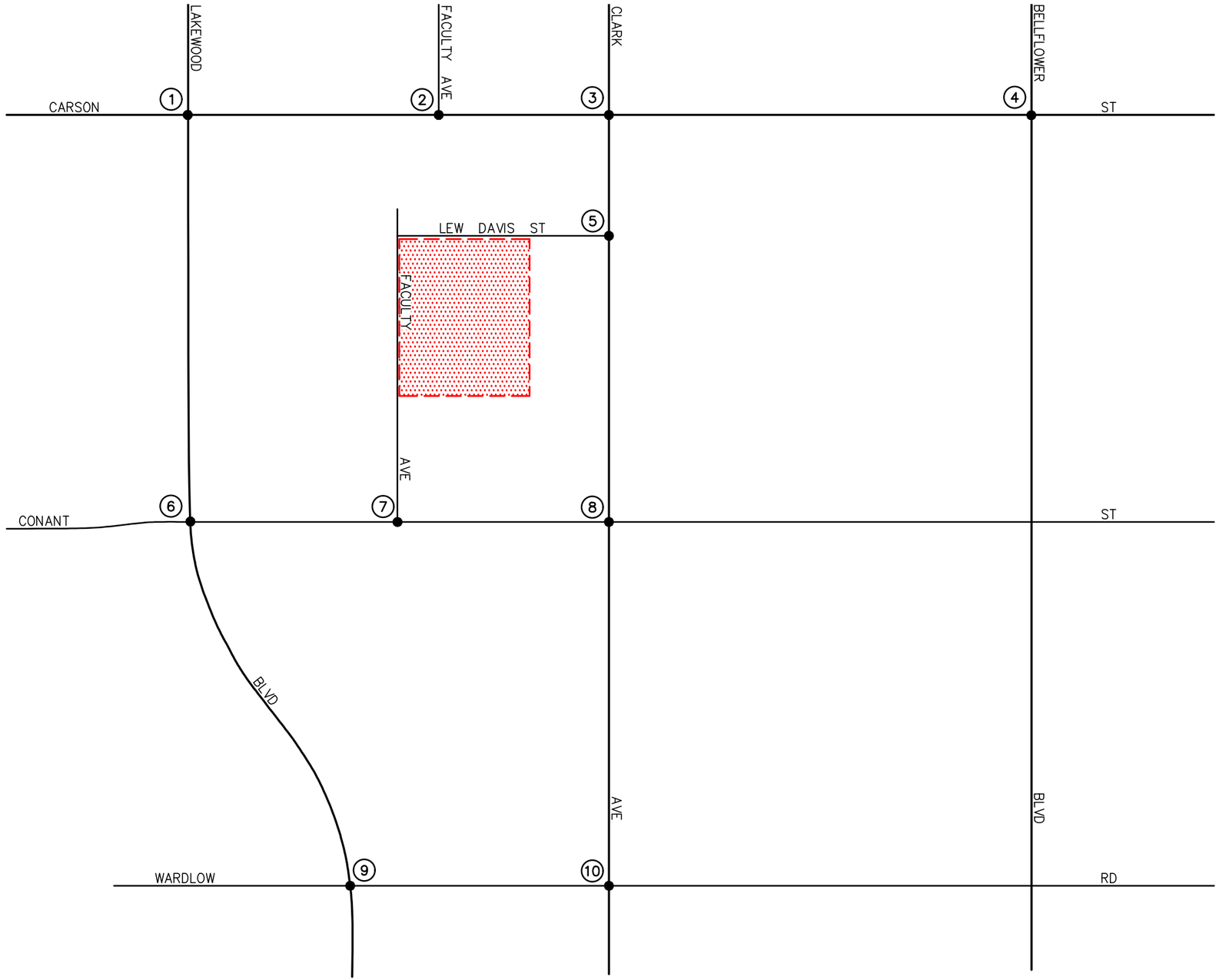
(#) = STUDY INTERSECTION

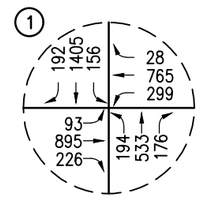
= PROJECT SITE

FIGURE 6-3

PM PEAK HOUR CUMULATIVE PROJECT TRAFFIC VOLUMES

LBCCD STADIUM AND ATHLETIC SPORTS COMPLEX, LONG BEACH





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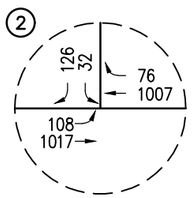

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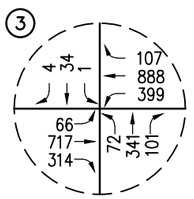

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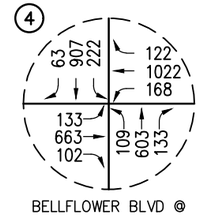

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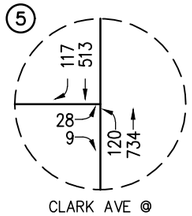

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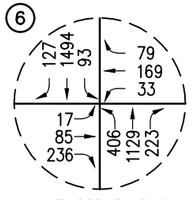

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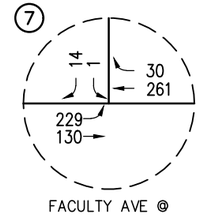

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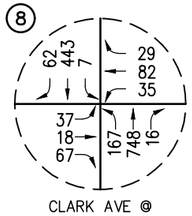

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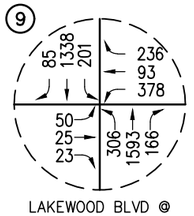

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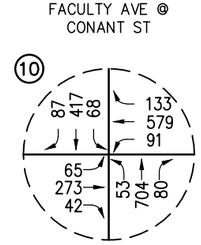

CLARK AVE @ WARDLOW RD

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N NO SCALE

KEY

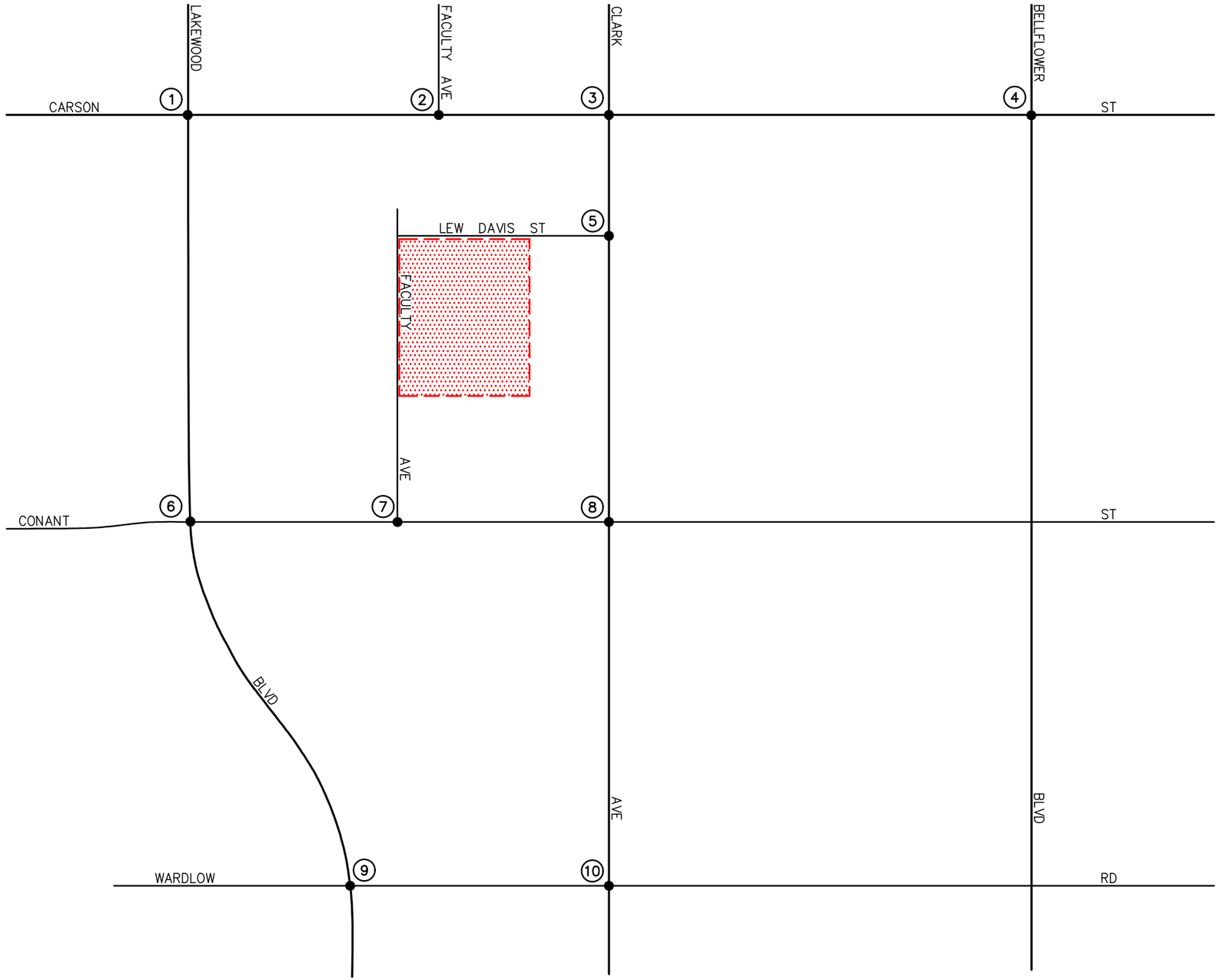
(#) = STUDY INTERSECTION

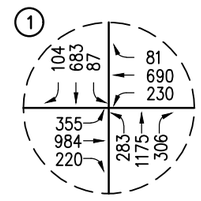
= PROJECT SITE

FIGURE 6-4

YEAR 2029 CUMULATIVE AM PEAK HOUR TRAFFIC VOLUMES

LBCCD STADIUM AND ATHLETIC SPORTS COMPLEX, LONG BEACH





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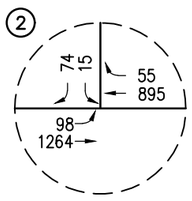

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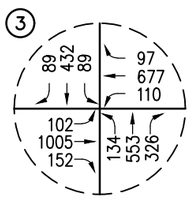

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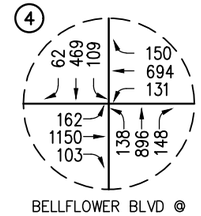

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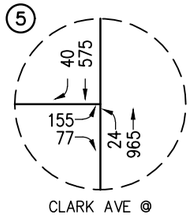
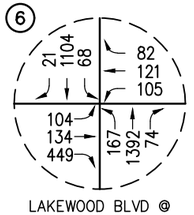


CLARK AVE @ LEW DAVIS ST



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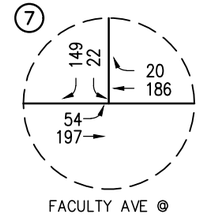

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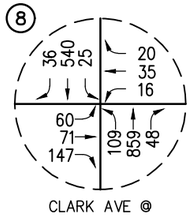

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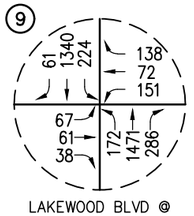

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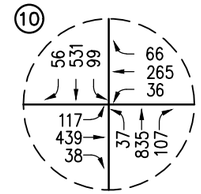

CLARK AVE @ WARDLOW RD

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NO SCALE

KEY

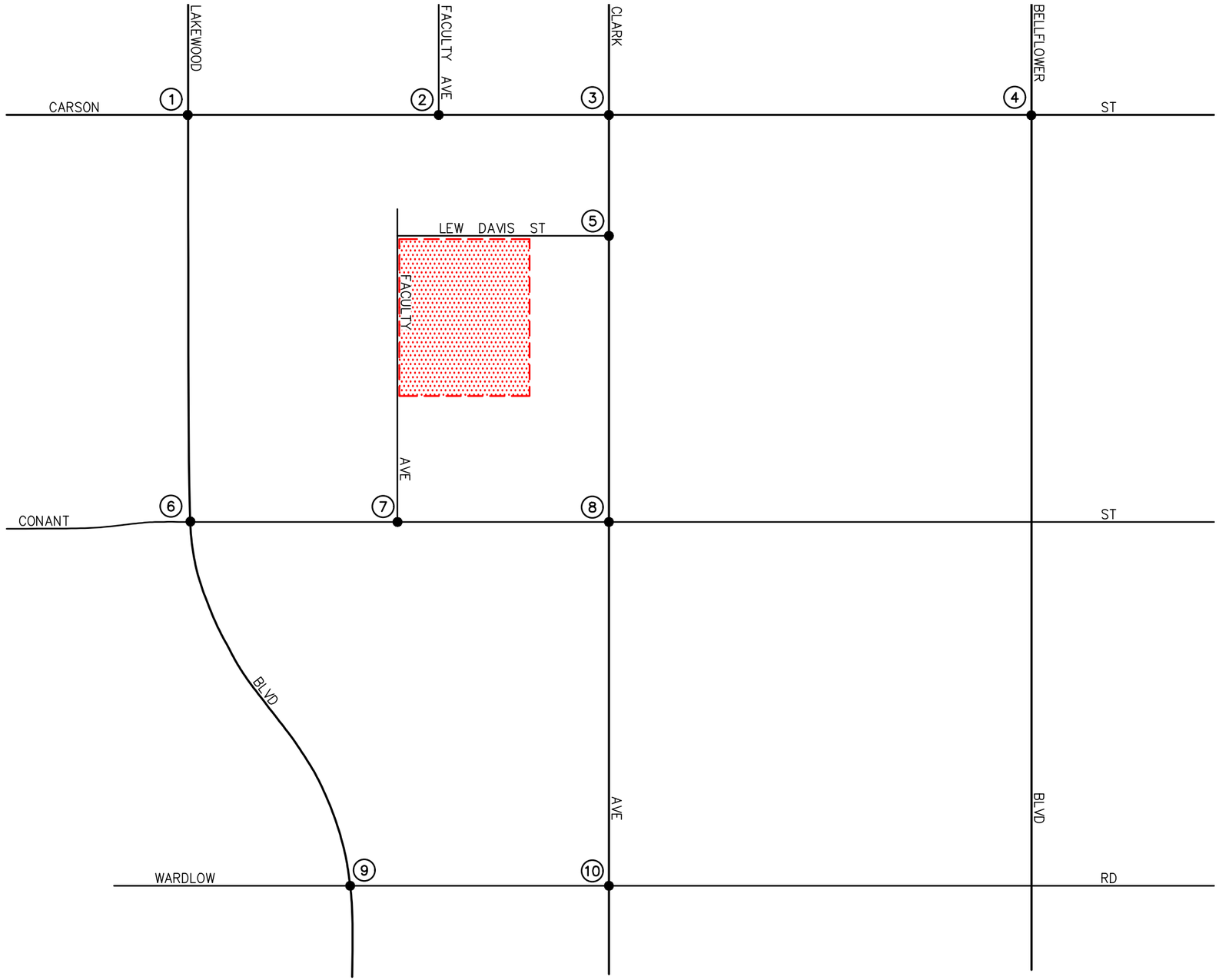
(#) = STUDY INTERSECTION

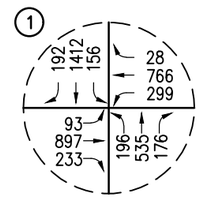
= PROJECT SITE

FIGURE 6-5

YEAR 2029 CUMULATIVE PM PEAK HOUR TRAFFIC VOLUMES

LBCCD STADIUM AND ATHLETIC SPORTS COMPLEX, LONG BEACH





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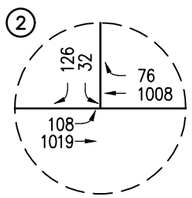
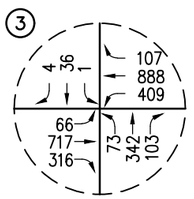


FACULTY AVE @ CARSON ST



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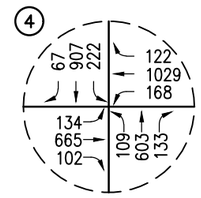

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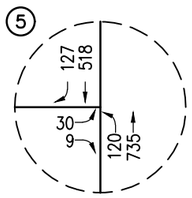

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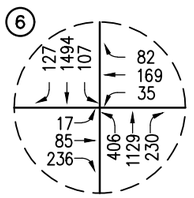
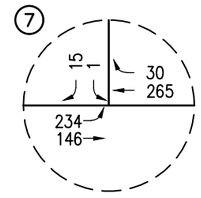


LAKEWOOD BLVD @ CONANT ST



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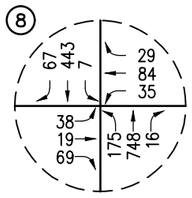

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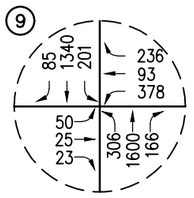

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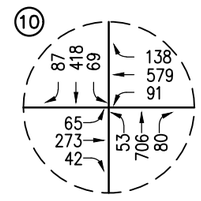

CLARK AVE @ WARDLOW RD

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N NO SCALE

KEY

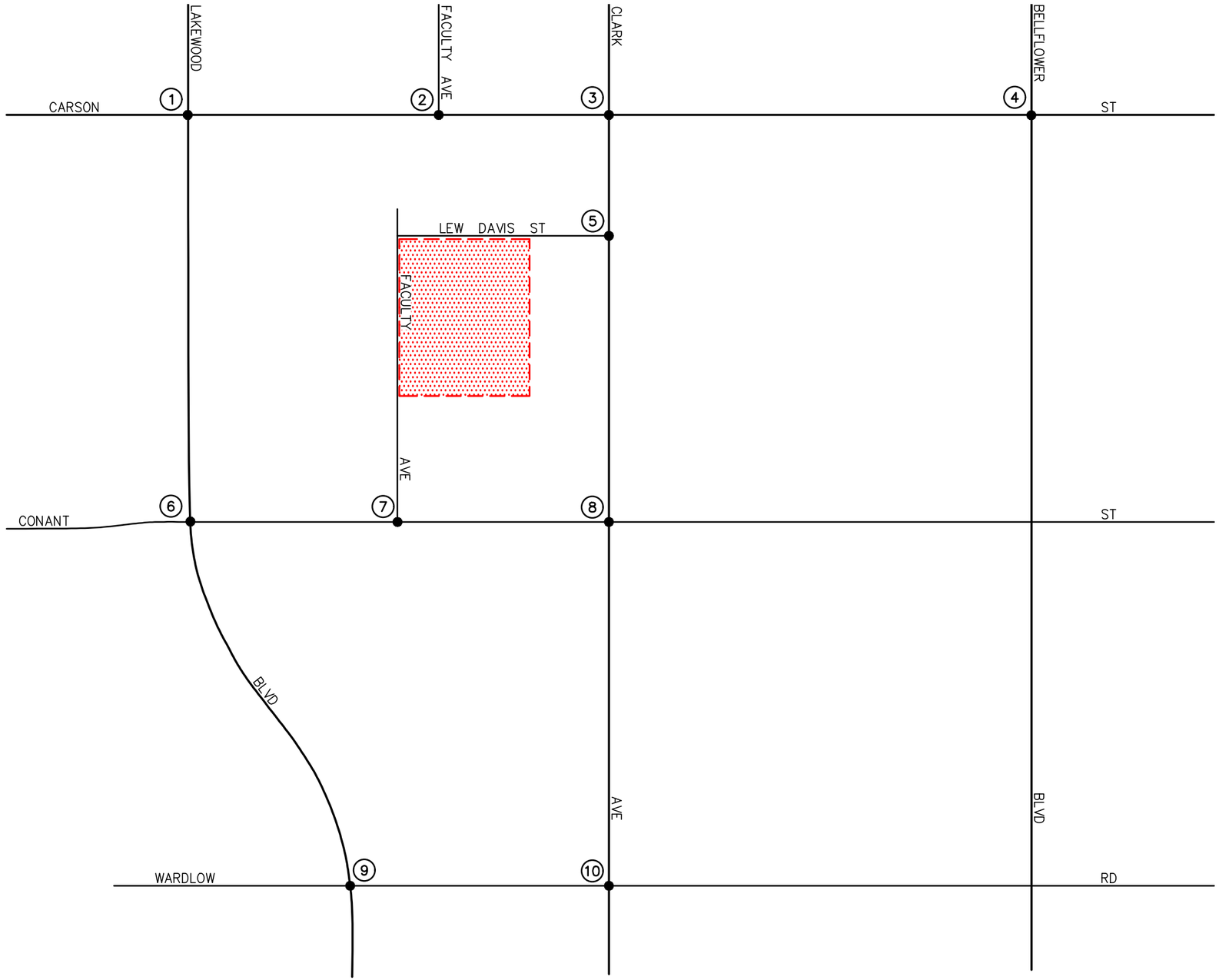
(#) = STUDY INTERSECTION

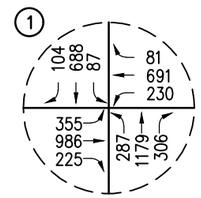
= PROJECT SITE

FIGURE 6-6

YEAR 2029 CUMULATIVE PLUS PROJECT AM PEAK HOUR TRAFFIC VOLUMES

LBCCD STADIUM AND ATHLETIC SPORTS COMPLEX, LONG BEACH





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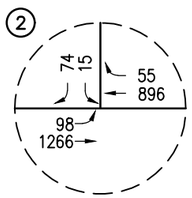

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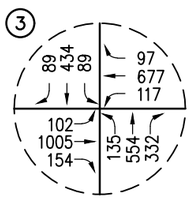

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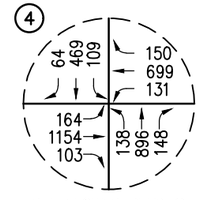

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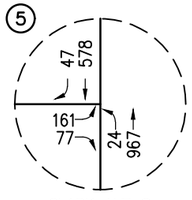
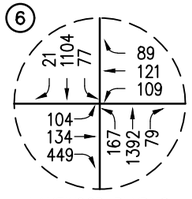
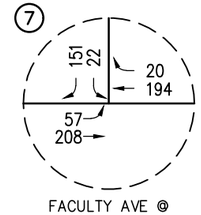


CLARK AVE @ LEW DAVIS ST



LAKEWOOD BLVD @ CONANT ST



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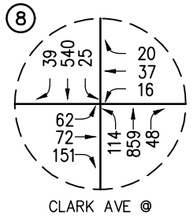

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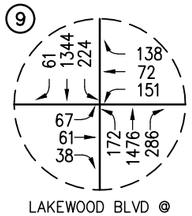
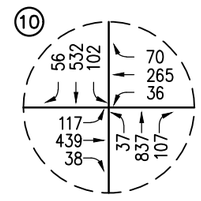


LAKEWOOD BLVD @ WARDLOW RD



CLARK AVE @ WARDLOW RD

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N NO SCALE

KEY

(#) = STUDY INTERSECTION

= PROJECT SITE

FIGURE 6-7

YEAR 2029 CUMULATIVE PLUS PROJECT PM PEAK HOUR TRAFFIC VOLUMES

LBCCD STADIUM AND ATHLETIC SPORTS COMPLEX, LONG BEACH

7.0 TRAFFIC ANALYSIS METHODOLOGY

7.1 LOS Consequences and Thresholds

The potential LOS consequences of the added project traffic volumes generated by the proposed Project during the weekday peak hours was evaluated based on analysis of future operating conditions at the ten (10) 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 consequence of added project-related peak hour traffic on the LOS at each key intersection was then evaluated using the following criteria.

7.1.1 *City of Long Beach*

According to the City of Long Beach, the City has identified LOS D as the threshold for acceptable operating conditions for intersections. The following criteria was used to determine if the addition of project traffic would be responsible for LOS deficiencies and whether feasible roadway improvements should be identified to improve performance:

Signalized Intersections:

- If, under without project conditions, the intersection operates at LOS D or better and the addition of project trips results in unacceptable LOS (LOS E/F). On occasion, LOS E may be allowed for peak periods in very dense urban conditions (such as in downtown Long Beach) per the City's discretion. The intersections specified in the City of Long Beach General Plan Mobility Element already operating at LOS E/F will be allowed to operate at existing levels; or

- If, under without project conditions, an intersection operates at LOS E or F and the project increases average control delay at the intersection by 2.5 seconds or more.

- If, under project conditions, the 95th percentile queue length exceeds the available storage length at any turn bay or lane group.

Unsignalized Intersections:

- If, under project conditions, the intersection operates at an unacceptable LOS (LOS E/F). On occasion, LOS E may be allowed for peak periods in very dense urban conditions (such as in downtown Long Beach) per the City's discretion.

- If the intersection meets the peak-hour traffic signal warrant after the addition of project traffic. If the intersection meets the peak-hour traffic signal warrant, all other applicable warrants must also be assessed.

7.2 Traffic Analysis Scenarios

The following scenarios are those for which intersection capacity calculations have been performed at the ten (10) key study intersections using the HCM methodologies:

A. Existing Traffic Conditions;
B. Existing Plus Project Traffic Conditions;
C. Scenario (B) with Improvements, if necessary;
D. Year 2029 Cumulative Traffic Conditions;
E. Year 2029 Cumulative Plus Project Traffic Conditions;
F. Scenario (E) with Improvements, if necessary.

8.0 PEAK HOUR INTERSECTION CAPACITY ANALYSIS

8.1 Existing Plus Project Traffic Conditions

Table 8-1 summarizes the peak hour Level of Service results at the ten (10) key study intersections for existing plus project traffic conditions. Column (1) of HCM/LOS values in *Table 8-1* presents a summary of Existing AM and PM peak hour traffic conditions (which were also presented in *Table 3-3*). Column (2) lists Existing Plus Project traffic conditions with current intersection geometry/lane configurations. Column (3) shows the increase in HCM value due to the added peak hour Project trips and indicates whether the traffic associated with the Project would result in LOS deficiencies and whether feasible roadway improvements would be necessary to improve intersection performance based on the criteria defined in this report.

8.1.1 *Existing Traffic Conditions*

As previously presented in *Table 3-3*, review of column (1) indicates that all of the key study intersections currently operate at LOS D or better during the weekday AM and PM peak hours.

8.1.2 *Existing Plus Project Traffic Conditions*

Review of columns (2) and (3) of *Table 8-1* indicates that all of the key study intersections are forecast to operate at acceptable LOS D or better during the weekday AM and PM peak hours under Existing Plus Project traffic conditions. As such, no intersection capacity enhancing or traffic signal operational improvements are required or recommended.

Appendix B also presents the Existing plus Project HCM/LOS calculations for the ten (10) key study intersections.

TABLE 8-1

EXISTING PLUS PROJECT PEAK HOUR INTERSECTION CAPACITY ANALYSIS SUMMARY

Key Intersections	Time Period	(1) Existing Traffic Conditions		(2) Existing Plus Project Traffic Conditions		(3) Exceeds LOS Criteria (2) – (1)	
		Delay (s/v)	LOS	Delay (s/v)	LOS	Increase (s/v)	Yes/No
1. Lakewood Boulevard at Carson Street	AM	34.8	C	34.8	C	0.0	No
	PM	35.9	D	35.9	D	0.0	No
2. Faculty Avenue at Carson Street	AM	28.4	D	28.4	D	0.0	No
	PM	17.4	C	17.4	C	0.0	No
3. Clark Avenue at Carson Street	AM	28.4	C	28.6	C	0.2	No
	PM	30.2	C	30.2	C	0.0	No
4. Bellflower Boulevard at Carson Street	AM	37.1	D	37.2	D	0.1	No
	PM	32.1	C	32.2	C	0.1	No
5. Clark Avenue at Lew Davis Street	AM	2.6	A	2.6	A	0.0	No
	PM	8.4	A	8.5	A	0.1	No
6. Lakewood Boulevard at Conant Street	AM	20.7	C	20.9	C	0.2	No
	PM	20.4	C	20.6	C	0.2	No
7. Faculty Avenue at Conant Street	AM	2.2	A	2.2	A	0.0	No
	PM	14.0	B	14.4	B	0.4	No
8. Clark Avenue at Conant Street	AM	9.5	A	9.7	A	0.2	No
	PM	10.2	B	10.3	B	0.1	No

Notes:

- s/v = seconds per vehicle (delay)

TABLE 8-1

EXISTING PLUS PROJECT PEAK HOUR INTERSECTION CAPACITY ANALYSIS SUMMARY

Key Intersections	Time Period	(1) Existing Traffic Conditions		(2) Existing Plus Project Traffic Conditions		(3) Exceeds LOS Criteria (2) – (1)	
		Delay (s/v)	LOS	Delay (s/v)	LOS	Increase (s/v)	Yes/No
9. Lakewood Boulevard at Wardlow Road	AM	29.7	C	29.7	C	0.0	No
	PM	20.2	C	20.2	C	0.0	No
10. Clark Avenue at Wardlow Road	AM	17.7	B	17.7	B	0.0	No
	PM	15.4	B	15.4	B	0.0	No

Notes:

- s/v = seconds per vehicle (delay)

8.2 Year 2029 Traffic Conditions

Table 8-2 summarizes the peak hour Level of Service results at the ten (10) key study intersections for the Year 2029 opening year. Column (1) of HCM/LOS values in *Table 8-2* presents a summary of Existing AM and PM peak hour traffic conditions (which were also presented in *Tables 3-3* and *8-1*). Column (2) lists future Year 2029 Cumulative traffic conditions (existing plus ambient growth traffic plus cumulative projects traffic), without any traffic generated by the proposed Project. Column (3) presents future forecast traffic conditions with the addition of traffic generated by the proposed Project. Column (4) shows the increase in HCM value due to the added peak hour Project trips and indicates whether the traffic associated with the Project would result in LOS deficiencies and whether feasible roadway improvements would be necessary to improve intersection performance based on the criteria defined in this report.

8.2.1 *Year 2029 Cumulative Traffic Conditions*

Review of column (2) of *Table 8-2* indicates that all of the key study intersections are forecast to operate at acceptable LOS D or better during the weekday AM and PM peak hours under Year 2029 Cumulative traffic conditions.

8.2.2 *Year 2029 Cumulative Plus Project Traffic Conditions*

Review of columns (3) and (4) of *Table 8-2* indicates that all of the key study intersections are forecast to operate at acceptable LOS D or better during the weekday AM and PM peak hours under Year 2029 Cumulative Plus Project traffic conditions. As such, no intersection capacity enhancing or traffic signal operational improvements are required or recommended.

Appendix B also presents the Year 2029 Cumulative and Year 2029 Cumulative plus Project HCM/LOS calculations for the ten (10) key study intersections.

TABLE 8-2

YEAR 2029 CUMULATIVE PLUS PROJECT PEAK HOUR INTERSECTION CAPACITY ANALYSIS SUMMARY

Key Intersections	Time Period	(1) Existing Traffic Conditions		(2) Year 2029 Cumulative Traffic Conditions		(3) Year 2029 Cumulative Plus Project Traffic Conditions		(4) Exceeds LOS Criteria (3) – (2)	
		Delay (s/v)	LOS	Delay (s/v)	LOS	Delay (s/v)	LOS	Increase (s/v)	Yes/No
1. Lakewood Boulevard at Carson Street	AM	34.8	C	35.3	D	35.4	D	0.1	No
	PM	35.9	D	36.3	D	36.4	D	0.1	No
2. Faculty Avenue at Carson Street	AM	28.4	D	33.5	D	33.5	D	0.0	No
	PM	17.4	C	18.7	C	18.7	C	0.0	No
3. Clark Avenue at Carson Street	AM	28.4	C	29.5	C	29.8	C	0.3	No
	PM	30.2	C	30.9	C	30.9	C	0.0	No
4. Bellflower Boulevard at Carson Street	AM	37.1	D	39.2	D	39.2	D	0.0	No
	PM	32.1	C	34.3	C	34.4	C	0.1	No
5. Clark Avenue at Lew Davis Street	AM	2.6	A	2.6	A	2.7	A	0.1	No
	PM	8.4	A	8.5	A	8.7	A	0.2	No
6. Lakewood Boulevard at Conant Street	AM	20.7	C	24.8	C	25.0	C	0.2	No
	PM	20.4	C	23.0	C	23.2	C	0.2	No
7. Faculty Avenue at Conant Street	AM	2.2	A	2.3	A	2.3	A	0.0	No
	PM	14.0	B	13.9	B	14.3	B	0.4	No
8. Clark Avenue at Conant Street	AM	9.5	A	9.9	A	10.1	B	0.2	No
	PM	10.2	B	10.4	B	10.6	B	0.2	No

Notes:

- s/v = seconds per vehicle (delay)

TABLE 8-2 (CONTINUED)

YEAR 2029 CUMULATIVE PLUS PROJECT PEAK HOUR INTERSECTION CAPACITY ANALYSIS SUMMARY

Key Intersections	Time Period	(1) Existing Traffic Conditions		(2) Year 2029 Cumulative Traffic Conditions		(3) Year 2029 Cumulative Plus Project Traffic Conditions		(4) Exceeds LOS Criteria (3) – (2)	
		Delay (s/v)	LOS	Delay (s/v)	LOS	Delay (s/v)	LOS	Increase (s/v)	Yes/No
9. Lakewood Boulevard at Wardlow Road	AM	29.7	C	31.1	C	31.1	C	0.0	No
	PM	20.2	C	20.6	C	20.6	C	0.0	No
10. Clark Avenue at Wardlow Road	AM	17.7	B	19.5	B	19.5	B	0.0	No
	PM	15.4	B	15.6	B	15.6	B	0.0	No

Notes:

- s/v = seconds per vehicle (delay)

9.0 INTERSECTION VEHICLE QUEUING ANALYSES

Per the City's guidelines, a vehicle queuing analysis was conducted at each signalized study intersection in addition to the intersection level of service analyses. The queuing analysis was prepared for each intersection lane group and was based on the 95th percentile queues utilizing the HCM methodology for signalized intersections.

The lane queuing analysis was based on the forecast weekday AM and PM intersection turning movement volumes utilized in the level of service analyses. The existing lane configurations and storage lengths were determined based on a review of aerial maps of the subject intersections obtained from Google Earth. An average vehicle length of 25 feet is assumed for the purposes of this analysis.

9.1 Existing and Existing Plus Project Traffic Conditions

Table 9-1 presents the lane queuing analyses results for the nine (9) signalized study intersections for Existing and Existing Plus Project traffic conditions. The first column (1) presents the lane queuing results for Existing traffic conditions. The second column (2) presents the results for Existing Plus Project traffic conditions.

9.1.1 *Existing Traffic Conditions*

Review of column (1) of *Table 9-1* indicates that six (6) of the nine (9) signalized key study intersections experience queues which exceed the available storage capacity for some movements. The remaining study intersections have queues which are accommodated within the existing storage. The intersections with a lane storage deficiency include the following:

- Intersection 1: Lakewood Boulevard at Carson Street
  - Eastbound Left-Turn – PM peak hour
  - Eastbound Right-Turn – AM and PM peak hours
- Intersection 3: Clark Avenue at Carson Street
  - Eastbound Right-Turn – AM peak hour
  - Westbound Left-Turn – AM peak hour
- Intersection 4: Bellflower Boulevard at Carson Street
  - Northbound Through – AM and PM peak hours
  - Southbound Left-Turn – AM peak hour
  - Southbound Through – AM peak hour
  - Southbound Through/Right-Turn – AM peak hour
- Intersection 5: Clark Avenue at Lew Davis Street
  - Eastbound Left-Turn – PM peak hour
- Intersection 9: Lakewood Boulevard at Wardlow Road
  - Westbound Left-Turn – AM peak hour
  - Westbound Right-Turn – AM peak hour

- Intersection 10: Clark Avenue at Wardlow Road
    - Westbound Left-Turn/Through – AM peak hour
    - Westbound Through/Right-Turn – AM peak hour

9.1.2 *Existing Plus Project Traffic Conditions*

Review of column (2) of *Table 9-1* indicates that six (6) of the nine (9) signalized key study intersections experience queues which exceed the available storage capacity for some movements, with the addition of Project traffic. The remaining study intersections have queues which are accommodated within the existing storage. The intersections with a lane storage deficiency include the following:

- Intersection 1: Lakewood Boulevard at Carson Street
    - Eastbound Left-Turn – PM peak hour
    - Eastbound Right-Turn – AM and PM peak hours
- Intersection 3: Clark Avenue at Carson Street
    - Eastbound Right-Turn – AM peak hour
    - Westbound Left-Turn – AM peak hour
- Intersection 4: Bellflower Boulevard at Carson Street
    - Northbound Through – AM and PM peak hours
    - Southbound Left-Turn – AM peak hour
    - Southbound Through – AM peak hour
    - Southbound Through/Right-Turn – AM peak hour
- Intersection 5: Clark Avenue at Lew Davis Street
    - Eastbound Left-Turn – PM peak hour
- Intersection 9: Lakewood Boulevard at Wardlow Road
    - Westbound Left-Turn – AM peak hour
    - Westbound Right-Turn – AM peak hour
- Intersection 10: Clark Avenue at Wardlow Road
    - Westbound Left-Turn/Through – AM peak hour
    - Westbound Through/Right-Turn – AM peak hour

Although there is a storage deficiency, it should be noted that the Project does not add volume to the eastbound left-turn movement at the intersection of Lakewood Boulevard at Carson Street (Intersection No. 1), the northbound through, southbound left-turn, and southbound through movements at the intersection of Bellflower Boulevard at Carson Street (Intersection No. 4), the westbound left-turn and right-turn movements at the intersection of Lakewood Boulevard at Wardlow Road (Intersection No. 9), and the westbound left-turn/through movement at the intersection of Clark Avenue at Wardlow Road (Intersection No. 10). Therefore, improvements at these intersections are not required/recommended.

The Project does add traffic to the remaining movements including the eastbound right-turn movement at the intersection of Lakewood Boulevard at Carson Street (Intersection No. 1), the eastbound right-turn and westbound left-turn movements at the intersection of Clark Avenue at Carson Street (Intersection No. 3), the southbound through/right-turn movement at the intersection of Bellflower Boulevard at Carson Street (Intersection No. 4), the eastbound left-turn movement at the intersection of Clark Avenue at Lew Davis Street (Intersection No. 5), and the westbound through/right-turn movement at the intersection of Clark Avenue at Wardlow Road (Intersection No. 10). However, these approaches have an increase of less than one vehicle with the addition of the Project. Therefore, improvements at these intersections are not required/recommended.

Appendix B also presents the Existing and Existing plus Project queuing information for the signalized study intersections.

9.2 Year 2029 Cumulative Traffic Conditions

Table 9-2 presents the lane queuing analyses results for the nine (9) signalized study intersections for the Year 2029 opening year. The first column (1) presents the lane queuing results for Year 2029 Cumulative traffic conditions. The second column (2) presents the results for Year 2029 Cumulative Plus Project traffic conditions.

9.2.1 *Year 2029 Cumulative Traffic Conditions*

Review of column (1) of *Table 9-1* indicates that seven (7) of the nine (9) signalized key study intersections experience queues which exceed the available storage capacity for some movements. The remaining study intersections have queues which are accommodated within the existing storage. The intersections with a lane storage deficiency include the following:

- Intersection 1: Lakewood Boulevard at Carson Street
  - Southbound Left-Turn – AM peak hour
  - Eastbound Left-Turn – PM peak hour
  - Eastbound Right-Turn – AM and PM peak hours
- Intersection 3: Clark Avenue at Carson Street
  - Eastbound Right-Turn – AM peak hour
  - Westbound Left-Turn – AM peak hour
- Intersection 4: Bellflower Boulevard at Carson Street
  - Northbound Left-Turn – PM peak hour
  - Northbound Through – AM and PM peak hours
  - Southbound Left-Turn – AM peak hour
  - Southbound Through – AM peak hour
  - Southbound Through/Right-Turn – AM peak hour
- Intersection 5: Clark Avenue at Lew Davis Street
  - Eastbound Left-Turn – PM peak hour

- Intersection 6: Lakewood Boulevard at Lew Davis Street
    - Northbound Left-Turn – AM peak hour
    - Eastbound Right-Turn – PM peak hour
- Intersection 9: Lakewood Boulevard at Wardlow Road
    - Westbound Left-Turn – AM peak hour
    - Westbound Right-Turn – AM peak hour
- Intersection 10: Clark Avenue at Wardlow Road
    - Westbound Left-Turn/Through – AM peak hour
    - Westbound Through/Right-Turn – AM peak hour

9.2.2 *Year 2029 Cumulative Plus Project Traffic Conditions*

Review of column (2) of *Table 9-2* indicates that seven (7) of the nine (9) signalized key study intersections experience queues which exceed the available storage capacity for some movements, with the addition of Project traffic. The remaining study intersections have queues which are accommodated within the existing storage. The intersections with a lane storage deficiency include the following:

- Intersection 1: Lakewood Boulevard at Carson Street
    - Southbound Left-Turn – AM peak hour
    - Eastbound Left-Turn – PM peak hour
    - Eastbound Right-Turn – AM and PM peak hours
- Intersection 3: Clark Avenue at Carson Street
    - Eastbound Right-Turn – AM peak hour
    - Westbound Left-Turn – AM peak hour
- Intersection 4: Bellflower Boulevard at Carson Street
    - Northbound Left-Turn – PM peak hour
    - Northbound Through – AM and PM peak hours
    - Southbound Left-Turn – AM peak hour
    - Southbound Through – AM peak hour
    - Southbound Through/Right-Turn – AM peak hour
- Intersection 5: Clark Avenue at Lew Davis Street
    - Eastbound Left-Turn – PM peak hour
- Intersection 6: Lakewood Boulevard at Lew Davis Street
    - Northbound Left-Turn – AM peak hour
    - Eastbound Right-Turn – PM peak hour
- Intersection 9: Lakewood Boulevard at Wardlow Road
    - Westbound Left-Turn – AM peak hour
    - Westbound Right-Turn – AM peak hour
- Intersection 10: Clark Avenue at Wardlow Road
    - Westbound Left-Turn/Through – AM peak hour
    - Westbound Through/Right-Turn – AM peak hour

Although there is a storage deficiency, it should be noted that the Project does not add volume to the southbound left-turn and eastbound left-turn movements at the intersection of Lakewood Boulevard at Carson Street (Intersection No. 1), the northbound left-turn, northbound through, southbound left-turn, and southbound through movements at the intersection of Bellflower Boulevard at Carson Street (Intersection No. 4), the northbound left-turn and eastbound right-turn movements at the intersection of Lakewood Boulevard at Lew Davis Street (Intersection No. 6), the westbound left-turn and right-turn movements at the intersection of Lakewood Boulevard at Wardlow Road (Intersection No. 9), and the westbound left-turn/through movement at the intersection of Clark Avenue at Wardlow Road (Intersection No. 10). Therefore, improvements at these intersections are not required/recommended.

The Project does add traffic to the remaining movements including the eastbound right-turn movement at the intersection of Lakewood Boulevard at Carson Street (Intersection No. 1), the eastbound right-turn and westbound left-turn movements at the intersection of Clark Avenue at Carson Street (Intersection No. 3), the southbound through/right-turn movement at the intersection of Bellflower Boulevard at Carson Street (Intersection No. 4), the eastbound left-turn movement at the intersection of Clark Avenue at Lew Davis Street (Intersection No. 5), and the westbound through/right-turn movement at the intersection of Clark Avenue at Wardlow Road (Intersection No. 10). However, these approaches have an increase of less than one vehicle with the addition of the Project. Therefore, improvements at these intersections are not required/recommended.

Appendix B also presents the Year 2029 Cumulative and Year 2029 Cumulative plus Project queuing information for the signalized study intersections.

TABLE 9-1

EXISTING PLUS PROJECT PEAK HOUR INTERSECTION QUEUING ANALYSIS[6]

Key Intersection	Storage Provided (feet)	(1) Existing Traffic Conditions				(2) Existing Plus Project Traffic Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)
1. Lakewood Boulevard at Carson Street									
Northbound Left-Turn	225'[7]	128'	Yes	186'	Yes	129'	Yes	189'	Yes
Northbound Through	600'	135'	Yes	265'	Yes	136'	Yes	267'	Yes
Northbound Right-Turn	215'	102'	Yes	172'	Yes	103'	Yes	172'	Yes
Southbound Left-Turn	220'	218'	Yes	125'	Yes	218'	Yes	125'	Yes
Southbound Through	1,290'	278'	Yes	148'	Yes	280'	Yes	149'	Yes
Southbound Through/Right-Turn	1,290'	291'	Yes	159'	Yes	293'	Yes	161'	Yes
Eastbound Left-Turn	185'[8]	63'	Yes	**223'**	**No**	63'	Yes	**223'**	**No**
Eastbound Through	1,000'	334'	Yes	351'	Yes	334'	Yes	352'	Yes
Eastbound Right-Turn	180'	**226'**	**No**	**192'**	**No**	**233'**	**No**	**196'**	**No**
Westbound Left-Turn	215'[9]	205'	Yes	150'	Yes	205'	Yes	150'	Yes
Westbound Through	380'	270'	Yes	278'	Yes	270'	Yes	278'	Yes
Westbound Through/Right-Turn	380'	279'	Yes	282'	Yes	279'	Yes	283'	Yes

Notes:

- **Bold** storage values indicate the anticipated queue exceeds the existing provided storage

6 Queues are based on HCM 95th Percentile methodology.

7 The northbound left-turn consists of dual lanes. The storage reported is the average of both lanes.

8 The eastbound left-turn consists of dual lanes. The storage reported is the average of both lanes.

9 The westbound left-turn consists of dual lanes. The storage reported is the average of both lanes.

TABLE 9-1 (CONTINUED)

EXISTING PLUS PROJECT PEAK HOUR INTERSECTION QUEUING ANALYSIS[10]

Key Intersection	Storage Provided (feet)	(1) Existing Traffic Conditions				(2) Existing Plus Project Traffic Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)
3. Clark Avenue at Carson Street									
Northbound Left-Turn	145'[11]	56'	Yes	83'	Yes	57'	Yes	81'	Yes
Northbound Through	755'	467'	Yes	539'	Yes	468'	Yes	540'	Yes
Northbound Right-Turn	445'[12]	42'	Yes	118'	Yes	43'	Yes	120'	Yes
Southbound Left-Turn	140'[13]	25'	Yes	54'	Yes	25'	Yes	54'	Yes
Southbound Through	1,280'	25'	Yes	230'	Yes	26'	Yes	234'	Yes
Southbound Through/Right-Turn	1,280'	25'	Yes	221'	Yes	26'	Yes	225'	Yes
Eastbound Left-Turn	165'	120'	Yes	134'	Yes	120'	Yes	134'	Yes
Eastbound Through	960'	239'	Yes	254'	Yes	240'	Yes	254'	Yes
Eastbound Right-Turn	140'	**267'**	**No**	93'	Yes	**271'**	**No**	92'	Yes
Westbound Left-Turn[14]	160'	**293'**	**No**	67'	Yes	**299'**	**No**	71'	Yes
Westbound Through	915'	272'	Yes	202'	Yes	273'	Yes	202'	Yes
Westbound Through/Right-Turn	915'	279'	Yes	207'	Yes	279'	Yes	207'	Yes

Notes:

- **Bold** storage values indicate the anticipated queue exceeds the existing provided storage

10 Queues are based on HCM 95th Percentile methodology.

11 The northbound left-turn consists of dual lanes. The storage reported is the average of both lanes.

12 The northbound right-turn consists of dual lanes. The storage reported is the average of both lanes.

13 The southbound left-turn consists of dual lanes. The storage reported is the average of both lanes.

14 The westbound left-turn consists of dual lanes. The storage reported is the average of both lanes.

TABLE 9-1 (CONTINUED)

EXISTING PLUS PROJECT PEAK HOUR INTERSECTION QUEUING ANALYSIS[15]

Key Intersection	Storage Provided (feet)	(1) Existing Traffic Conditions				(2) Existing Plus Project Traffic Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)
4. Bellflower Boulevard at Carson Street									
Northbound Left-Turn	165’	151’	Yes	164’	Yes	151’	Yes	164’	Yes
Northbound Through	170’	**291’**	**No**	**384’**	**No**	**290’**	**No**	**384’**	**No**
Northbound Right-Turn	170’	130’	Yes	122’	Yes	130’	Yes	122’	Yes
Southbound Left-Turn	155’	**253’**	**No**	136’	Yes	**253’**	**No**	136’	Yes
Southbound Through	435’	**474’**	**No**	232’	Yes	**476’**	**No**	233’	Yes
Southbound Through/Right-Turn	435’	**466’**	**No**	226’	Yes	**468’**	**No**	226’	Yes
Eastbound Left-Turn	330’	167’	Yes	189’	Yes	173’	Yes	191’	Yes
Eastbound Through	1,535’	196’	Yes	310’	Yes	197’	Yes	311’	Yes
Eastbound Through/Right-Turn	1,535’	200’	Yes	324’	Yes	201’	Yes	325’	Yes
Westbound Left-Turn	300’	209’	Yes	168’	Yes	209’	Yes	168’	Yes
Westbound Through	1,220’	283’	Yes	218’	Yes	284’	Yes	220’	Yes
Westbound Through/Right-Turn	1,220’	290’	Yes	220’	Yes	291’	Yes	222’	Yes
5. Clark Avenue at Lew Davis Street									
Northbound Left-Turn	75’	25’	Yes	25’	Yes	25’	Yes	25’	Yes
Northbound Through	195’	25’	Yes	109’	Yes	25’	Yes	113’	Yes

Notes:

- **Bold** storage values indicate the anticipated queue exceeds the existing provided storage

[15] Queues are based on HCM 95th Percentile methodology.

TABLE 9-1 (CONTINUED)

EXISTING PLUS PROJECT PEAK HOUR INTERSECTION QUEUING ANALYSIS[16]

Key Intersection	Storage Provided (feet)	(1) Existing Traffic Conditions				(2) Existing Plus Project Traffic Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)
5. Clark Avenue at									
Lew Davis Street (Continued)									
Southbound Through	750'	25'	Yes	62'	Yes	25'	Yes	65'	Yes
Southbound Through/Right-Turn	750'	25'	Yes	62'	Yes	25'	Yes	66'	Yes
Eastbound Left-Turn	80'	36'	Yes	**194'**	**No**	38'	Yes	**199'**	**No**
Eastbound Right-Turn	1,235'	25'	Yes	86'	Yes	25'	Yes	86'	Yes
6. Lakewood Boulevard at									
Lew Davis Street									
Northbound Left-Turn	220'[17]	181'	Yes	82'	Yes	181'	Yes	82'	Yes
Northbound Through	560'	198'	Yes	254'	Yes	199'	Yes	257'	Yes
Northbound Right-Turn	230'	113'	Yes	34'	Yes	118'	Yes	37'	Yes
Southbound Left-Turn	200'[18]	55'	Yes	34'	Yes	64'	Yes	39'	Yes
Southbound Through	845'	319'	Yes	199'	Yes	320'	Yes	200'	Yes
Southbound Through/Right-Turn	845'	341'	Yes	212'	Yes	342'	Yes	213'	Yes
Eastbound Left-Turn	210'	25'	Yes	25'	Yes	25'	Yes	25'	Yes
Eastbound Through	485'	90'	Yes	127'	Yes	90'	Yes	127'	Yes

Notes:

- **Bold** storage values indicate the anticipated queue exceeds the existing provided storage

16 Queues are based on HCM 95th Percentile methodology.

17 The northbound left-turn consists of dual lanes. The storage reported is the average of both lanes.

18 The southbound left-turn consists of dual lanes. The storage reported is the average of both lanes.

TABLE 9-1 (CONTINUED)

EXISTING PLUS PROJECT PEAK HOUR INTERSECTION QUEUING ANALYSIS[19]

Key Intersection	Storage Provided (feet)	(1) Existing Traffic Conditions				(2) Existing Plus Project Traffic Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)
6. Lakewood Boulevard at Lew Davis Street (Continued)									
Eastbound Right-Turn	225'[20]	124'	Yes	188'	Yes	124'	Yes	188'	Yes
Westbound Left-Turn	145'	30'	Yes	82'	Yes	31'	Yes	85'	Yes
Westbound Through	1,195'	169'	Yes	94'	Yes	169'	Yes	94'	Yes
Westbound Right-Turn	170'	72'	Yes	62'	Yes	74'	Yes	68'	Yes
7. Faculty Avenue at Conant Street									
Southbound Left-Turn	95'	25'	Yes	25'	Yes	25'	Yes	25'	Yes
Southbound Right-Turn	1,680'	25'	Yes	163'	Yes	25'	Yes	175'	Yes
Eastbound Left-Turn	120'	25'	Yes	25'	Yes	25'	Yes	25'	Yes
Eastbound Through	1,190'	25'	Yes	25'	Yes	25'	Yes	25'	Yes
Westbound Through	1,200'	25'	Yes	25'	Yes	25'	Yes	25'	Yes
Westbound Through/Right-Turn	1,200'	25'	Yes	25'	Yes	25'	Yes	25'	Yes
8. Clark Avenue at Conant Street									
Northbound Left-Turn	100'	80'	Yes	40'	Yes	87'	Yes	43'	Yes

Notes:

- **Bold** storage values indicate the anticipated queue exceeds the existing provided storage

[19] Queues are based on HCM 95th Percentile methodology.

[20] The eastbound right-turn consists of dual lanes. The storage reported is the average of both lanes.

TABLE 9-1 (CONTINUED)

EXISTING PLUS PROJECT PEAK HOUR INTERSECTION QUEUING ANALYSIS[21]

Key Intersection	Storage Provided (feet)	(1) Existing Traffic Conditions				(2) Existing Plus Project Traffic Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)
8. Clark Avenue at Conant Street (Continued)									
Northbound Through	955'	97'	Yes	107'	Yes	99'	Yes	110'	Yes
Northbound Through/Right-Turn	955'	97'	Yes	106'	Yes	98'	Yes	109'	Yes
Southbound Left-Turn	200'	25'	Yes	25'	Yes	25'	Yes	25'	Yes
Southbound Through	1,685'	58'	Yes	59'	Yes	60'	Yes	61'	Yes
Southbound Through/Right-Turn	1,685'	56'	Yes	58'	Yes	58'	Yes	60'	Yes
Eastbound Left-Turn	120'	51'	Yes	68'	Yes	52'	Yes	69'	Yes
Eastbound Through	1,205'	25'	Yes	73'	Yes	25'	Yes	74'	Yes
Eastbound Right-Turn	310'	83'	Yes	181'	Yes	86'	Yes	186'	Yes
Westbound Left-Turn/Through/Right-Turn	240'	190'	Yes	75'	Yes	192'	Yes	77'	Yes
9. Lakewood Boulevard at Wardlow Road									
Northbound Left-Turn	365'[22]	235'	Yes	108'	Yes	235'	Yes	108'	Yes
Northbound Through	1,280'	311'	Yes	227'	Yes	313'	Yes	228'	Yes
Northbound Through/Right-Turn	1,280'	330'	Yes	233'	Yes	332'	Yes	234'	Yes

Notes:

- **Bold** storage values indicate the anticipated queue exceeds the existing provided storage

[21] Queues are based on HCM 95th Percentile methodology.

[22] The northbound left-turn consists of dual lanes. The storage reported is the average of both lanes.

TABLE 9-1 (CONTINUED)

EXISTING PLUS PROJECT PEAK HOUR INTERSECTION QUEUING ANALYSIS[23]

Key Intersection	Storage Provided (feet)	(1) Existing Traffic Conditions				(2) Existing Plus Project Traffic Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)
9. Lakewood Boulevard at Wardlow Road (Continued)									
Southbound Left-Turn	260'[24]	170'	Yes	137'	Yes	170'	Yes	137'	Yes
Southbound Through	2,410'	284'	Yes	153'	Yes	284'	Yes	154'	Yes
Southbound Through/Right-Turn	2,410'	306'	Yes	170'	Yes	306'	Yes	171'	Yes
Eastbound Left-Turn	95'[25]	40'	Yes	41'	Yes	40'	Yes	41'	Yes
Eastbound Through	640'	25'	Yes	34'	Yes	25'	Yes	34'	Yes
Eastbound Right-Turn	135'	35'	Yes	44'	Yes	35'	Yes	44'	Yes
Westbound Left-Turn	200'[26]	**277'**	**No**	94'	Yes	**277'**	**No**	94'	Yes
Westbound Through	1,445'	61'	Yes	40'	Yes	61'	Yes	40'	Yes
Westbound Right-Turn	205'	**333'**	**No**	176'	Yes	**333'**	**No**	176'	Yes
10. Clark Avenue at Wardlow Road									
Northbound Left-Turn	150'	29'	Yes	25'	Yes	30'	Yes	25'	Yes
Northbound Through	1,190'	126'	Yes	100'	Yes	127'	Yes	101'	Yes

Notes:

- **Bold** storage values indicate the anticipated queue exceeds the existing provided storage

[23] Queues are based on HCM 95th Percentile methodology.

[24] The southbound left-turn consists of dual lanes. The storage reported is the average of both lanes.

[25] The eastbound left-turn consists of dual lanes. The storage reported is the average of both lanes.

[26] The westbound left-turn consists of dual lanes. The storage reported is the average of both lanes.

TABLE 9-1 (CONTINUED)

EXISTING PLUS PROJECT PEAK HOUR INTERSECTION QUEUING ANALYSIS[27]

Key Intersection	Storage Provided (feet)	(1) Existing Traffic Conditions				(2) Existing Plus Project Traffic Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)
10. Clark Avenue at Wardlow Road (Continued)									
Northbound Through/Right-Turn	1,190'	131'	Yes	104'	Yes	132'	Yes	105'	Yes
Southbound Left-Turn	295'	44'	Yes	49'	Yes	45'	Yes	51'	Yes
Southbound Through	1,150'	76'	Yes	57'	Yes	77'	Yes	58'	Yes
Southbound Through/Right-Turn	1,150'	79'	Yes	60'	Yes	79'	Yes	61'	Yes
Eastbound Left-Turn	175'	67'	Yes	112'	Yes	67'	Yes	112'	Yes
Eastbound Through	1,440'	105'	Yes	192'	Yes	105'	Yes	192'	Yes
Eastbound Through/Right-Turn	1,440'	102'	Yes	189'	Yes	102'	Yes	188'	Yes
Westbound Left-Turn/Through	200'	**297'**	**No**	134'	Yes	**298'**	**No**	137'	Yes
Westbound Through/Right-Turn	200'	**300'**	**No**	154'	Yes	**301'**	**No**	155'	Yes

Notes:

- **Bold** storage values indicate the anticipated queue exceeds the existing provided storage

[27] Queues are based on HCM 95th Percentile methodology.

TABLE 9-2

YEAR 2029 CUMULATIVE PLUS PROJECT PEAK HOUR INTERSECTION QUEUING ANALYSIS[28]

Key Intersection	Storage Provided (feet)	(1) Year 2029 Cumulative Traffic Conditions				(2) Year 2029 Cumulative Plus Project Traffic Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)
1. Lakewood Boulevard at Carson Street									
Northbound Left-Turn	225'[29]	151'	Yes	200'	Yes	153'	Yes	203'	Yes
Northbound Through	600'	154'	Yes	312'	Yes	155'	Yes	309'	Yes
Northbound Right-Turn	215'	113'	Yes	190'	Yes	113'	Yes	191'	Yes
Southbound Left-Turn	220'	**229'**	**No**	142'	Yes	**229'**	**No**	142'	Yes
Southbound Through	1,290'	326'	Yes	166'	Yes	328'	Yes	165'	Yes
Southbound Through/Right-Turn	1,290'	342'	Yes	178'	Yes	344'	Yes	177'	Yes
Eastbound Left-Turn	185'[30]	68'	Yes	**237'**	**No**	68'	Yes	**237'**	**No**
Eastbound Through	1,000'	347'	Yes	366'	Yes	347'	Yes	366'	Yes
Eastbound Right-Turn	180'	**237'**	**No**	**210'**	**No**	**244'**	**No**	**214'**	**No**
Westbound Left-Turn	215'[31]	214'	Yes	158'	Yes	214'	Yes	161'	Yes
Westbound Through	380'	279'	Yes	293'	Yes	280'	Yes	296'	Yes
Westbound Through/Right-Turn	380'	289'	Yes	297'	Yes	289'	Yes	301'	Yes

Notes:

- **Bold** storage values indicate the anticipated queue exceeds the existing provided storage

28 Queues are based on HCM 95th Percentile methodology.

29 The northbound left-turn consists of dual lanes. The storage reported is the average of both lanes.

30 The eastbound left-turn consists of dual lanes. The storage reported is the average of both lanes.

31 The westbound left-turn consists of dual lanes. The storage reported is the average of both lanes.

TABLE 9-2 (CONTINUED)

YEAR 2029 CUMULATIVE PLUS PROJECT PEAK HOUR INTERSECTION QUEUING ANALYSIS[32]

Key Intersection	Storage Provided (feet)	(1) Year 2029 Cumulative Traffic Conditions				(2) Year 2029 Cumulative Plus Project Traffic Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)
3. Clark Avenue at Carson Street									
Northbound Left-Turn	145'[33]	58'	Yes	84'	Yes	60'	Yes	85'	Yes
Northbound Through	755'	490'	Yes	566'	Yes	494'	Yes	566'	Yes
Northbound Right-Turn	445'[34]	43'	Yes	121'	Yes	43'	Yes	123'	Yes
Southbound Left-Turn	140'[35]	25'	Yes	56'	Yes	25'	Yes	56'	Yes
Southbound Through	1,280'	26'	Yes	239'	Yes	27'	Yes	240'	Yes
Southbound Through/Right-Turn	1,280'	26'	Yes	230'	Yes	27'	Yes	230'	Yes
Eastbound Left-Turn	165'	126'	Yes	141'	Yes	126'	Yes	141'	Yes
Eastbound Through	960'	260'	Yes	276'	Yes	262'	Yes	276'	Yes
Eastbound Right-Turn	140'	**294'**	**No**	100'	Yes	**306'**	**No**	101'	Yes
Westbound Left-Turn[36]	160'	**306'**	**No**	70'	Yes	**311'**	**No**	75'	Yes
Westbound Through	915'	298'	Yes	220'	Yes	298'	Yes	220'	Yes
Westbound Through/Right-Turn	915'	306'	Yes	225'	Yes	306'	Yes	225'	Yes

Notes:

- **Bold** storage values indicate the anticipated queue exceeds the existing provided storage

32 Queues are based on HCM 95th Percentile methodology.

33 The northbound left-turn consists of dual lanes. The storage reported is the average of both lanes.

34 The northbound right-turn consists of dual lanes. The storage reported is the average of both lanes.

35 The southbound left-turn consists of dual lanes. The storage reported is the average of both lanes.

36 The westbound left-turn consists of dual lanes. The storage reported is the average of both lanes.

TABLE 9-2 (CONTINUED)

YEAR 2029 CUMULATIVE PLUS PROJECT PEAK HOUR INTERSECTION QUEUING ANALYSIS[37]

Key Intersection	Storage Provided (feet)	(1) Year 2029 Cumulative Traffic Conditions				(2) Year 2029 Cumulative Plus Project Traffic Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)
4. Bellflower Boulevard at Carson Street									
Northbound Left-Turn	165’	158’	Yes	**180’**	**No**	158’	Yes	**180’**	**No**
Northbound Through	170’	**313’**	**No**	**419’**	**No**	**312’**	**No**	**419’**	**No**
Northbound Right-Turn	170’	141’	Yes	133’	Yes	141’	Yes	133’	Yes
Southbound Left-Turn	155’	**273’**	**No**	145’	Yes	**273’**	**No**	145’	Yes
Southbound Through	435’	**516’**	**No**	249’	Yes	**518’**	**No**	250’	Yes
Southbound Through/Right-Turn	435’	**508’**	**No**	242’	Yes	**510’**	**No**	243’	Yes
Eastbound Left-Turn	330’	184’	Yes	205’	Yes	186’	Yes	206’	Yes
Eastbound Through	1,535’	220’	Yes	356’	Yes	221’	Yes	357’	Yes
Eastbound Through/Right-Turn	1,535’	224’	Yes	373’	Yes	225’	Yes	375’	Yes
Westbound Left-Turn	300’	225’	Yes	179’	Yes	225’	Yes	179’	Yes
Westbound Through	1,220’	319’	Yes	247’	Yes	321’	Yes	249’	Yes
Westbound Through/Right-Turn	1,220’	327’	Yes	249’	Yes	330’	Yes	251’	Yes
5. Clark Avenue at Lew Davis Street									
Northbound Left-Turn	75’	27’	Yes	25’	Yes	28’	Yes	25’	Yes
Northbound Through	195’	25’	Yes	123’	Yes	25’	Yes	128’	Yes

Notes:

- **Bold** storage values indicate the anticipated queue exceeds the existing provided storage

[37] Queues are based on HCM 95th Percentile methodology.

TABLE 9-2 (CONTINUED)

YEAR 2029 CUMULATIVE PLUS PROJECT PEAK HOUR INTERSECTION QUEUING ANALYSIS[38]

Key Intersection	Storage Provided (feet)	(1) Year 2029 Cumulative Traffic Conditions				(2) Year 2029 Cumulative Plus Project Traffic Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)
5. Clark Avenue at									
Lew Davis Street (Continued)									
Southbound Through	750’	25’	Yes	68’	Yes	25’	Yes	72’	Yes
Southbound Through/Right-Turn	750’	25’	Yes	69’	Yes	25’	Yes	73’	Yes
Eastbound Left-Turn	80’	37’	Yes	**200’**	**No**	40’	Yes	**206’**	**No**
Eastbound Right-Turn	1,235’	25’	Yes	91’	Yes	25’	Yes	90’	Yes
6. Lakewood Boulevard at									
Lew Davis Street									
Northbound Left-Turn	220’[39]	**245’**	**No**	97’	Yes	**245’**	**No**	97’	Yes
Northbound Through	560’	225’	Yes	300’	Yes	227’	Yes	302’	Yes
Northbound Right-Turn	230’	130’	Yes	41’	Yes	136’	Yes	44’	Yes
Southbound Left-Turn	200’[40]	61’	Yes	37’	Yes	72’	Yes	42’	Yes
Southbound Through	845’	439’	Yes	237’	Yes	441’	Yes	238’	Yes
Southbound Through/Right-Turn	845’	466’	Yes	252’	Yes	468’	Yes	253’	Yes
Eastbound Left-Turn	210’	25’	Yes	110’	Yes	25’	Yes	110’	Yes
Eastbound Through	485’	99’	Yes	124’	Yes	99’	Yes	124’	Yes

Notes:

- **Bold** storage values indicate the anticipated queue exceeds the existing provided storage

38 Queues are based on HCM 95th Percentile methodology.

39 The northbound left-turn consists of dual lanes. The storage reported is the average of both lanes.

40 The southbound left-turn consists of dual lanes. The storage reported is the average of both lanes.

TABLE 9-2 (CONTINUED)

YEAR 2029 CUMULATIVE PLUS PROJECT PEAK HOUR INTERSECTION QUEUING ANALYSIS[41]

Key Intersection	Storage Provided (feet)	(1) Year 2029 Cumulative Traffic Conditions				(2) Year 2029 Cumulative Plus Project Traffic Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)
6. Lakewood Boulevard at Lew Davis Street (Continued)									
Eastbound Right-Turn	225'[42]	145'	Yes	**226'**	**No**	145'	Yes	**226'**	**No**
Westbound Left-Turn	145'	33'	Yes	80'	Yes	35'	Yes	83'	Yes
Westbound Through	1,195'	185'	Yes	92'	Yes	185'	Yes	92'	Yes
Westbound Right-Turn	170'	82'	Yes	61'	Yes	86'	Yes	67'	Yes
7. Faculty Avenue at Conant Street									
Southbound Left-Turn	95'	25'	Yes	25'	Yes	25'	Yes	25'	Yes
Southbound Right-Turn	1,680'	25'	Yes	170'	Yes	25'	Yes	183'	Yes
Eastbound Left-Turn	120'	25'	Yes	25'	Yes	25'	Yes	25'	Yes
Eastbound Through	1,190'	25'	Yes	25'	Yes	25'	Yes	25'	Yes
Westbound Through	1,200'	25'	Yes	25'	Yes	25'	Yes	25'	Yes
Westbound Through/Right-Turn	1,200'	25'	Yes	25'	Yes	25'	Yes	25'	Yes
8. Clark Avenue at Conant Street									
Northbound Left-Turn	100'	93'	Yes	45'	Yes	101'	Yes	48'	Yes

Notes:

- **Bold** storage values indicate the anticipated queue exceeds the existing provided storage

[41] Queues are based on HCM 95th Percentile methodology.

[42] The eastbound right-turn consists of dual lanes. The storage reported is the average of both lanes.

TABLE 9-2 (CONTINUED)

YEAR 2029 CUMULATIVE PLUS PROJECT PEAK HOUR INTERSECTION QUEUING ANALYSIS[43]

Key Intersection	Storage Provided (feet)	(1) Year 2029 Cumulative Traffic Conditions				(2) Year 2029 Cumulative Plus Project Traffic Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)
8. Clark Avenue at Conant Street (Continued)									
Northbound Through	955'	112'	Yes	120'	Yes	113'	Yes	124'	Yes
Northbound Through/Right-Turn	955'	111'	Yes	119'	Yes	113'	Yes	122'	Yes
Southbound Left-Turn	200'	25'	Yes	25'	Yes	25'	Yes	25'	Yes
Southbound Through	1,685'	66'	Yes	66'	Yes	68'	Yes	68'	Yes
Southbound Through/Right-Turn	1,685'	64'	Yes	65'	Yes	65'	Yes	67'	Yes
Eastbound Left-Turn	120'	53'	Yes	70'	Yes	56'	Yes	73'	Yes
Eastbound Through	1,205'	25'	Yes	79'	Yes	25'	Yes	80'	Yes
Eastbound Right-Turn	310'	86'	Yes	190'	Yes	88'	Yes	194'	Yes
Westbound Left-Turn/Through/Right-Turn	240'	200'	Yes	79'	Yes	203'	Yes	82'	Yes
9. Lakewood Boulevard at Wardlow Road									
Northbound Left-Turn	365'[44]	249'	Yes	112'	Yes	249'	Yes	112'	Yes
Northbound Through	1,280'	365'	Yes	249'	Yes	367'	Yes	250'	Yes
Northbound Through/Right-Turn	1,280'	391'	Yes	257'	Yes	393'	Yes	257'	Yes

Notes:

- **Bold** storage values indicate the anticipated queue exceeds the existing provided storage

[43] Queues are based on HCM 95th Percentile methodology.

[44] The northbound left-turn consists of dual lanes. The storage reported is the average of both lanes.

TABLE 9-2 (CONTINUED)

YEAR 2029 CUMULATIVE PLUS PROJECT PEAK HOUR INTERSECTION QUEUING ANALYSIS[45]

Key Intersection	Storage Provided (feet)	(1) Year 2029 Cumulative Traffic Conditions				(2) Year 2029 Cumulative Plus Project Traffic Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)
9. Lakewood Boulevard at Wardlow Road (Continued)									
Southbound Left-Turn	260'[46]	187'	Yes	147'	Yes	187'	Yes	147'	Yes
Southbound Through	2,410'	311'	Yes	184'	Yes	311'	Yes	184'	Yes
Southbound Through/Right-Turn	2,410'	336'	Yes	201'	Yes	336'	Yes	202'	Yes
Eastbound Left-Turn	95'[47]	41'	Yes	43'	Yes	41'	Yes	43'	Yes
Eastbound Through	640'	25'	Yes	35'	Yes	25'	Yes	35'	Yes
Eastbound Right-Turn	135'	36'	Yes	46'	Yes	36'	Yes	46'	Yes
Westbound Left-Turn	200'[48]	**295'**	**No**	99'	Yes	**295'**	**No**	99'	Yes
Westbound Through	1,445'	62'	Yes	41'	Yes	62'	Yes	41'	Yes
Westbound Right-Turn	205'	**349'**	**No**	187'	Yes	**349'**	**No**	187'	Yes
10. Clark Avenue at Wardlow Road									
Northbound Left-Turn	150'	37'	Yes	25'	Yes	37'	Yes	25'	Yes
Northbound Through	1,190'	165'	Yes	112'	Yes	166'	Yes	113'	Yes

Notes:

- **Bold** storage values indicate the anticipated queue exceeds the existing provided storage

[45] Queues are based on HCM 95th Percentile methodology.

[46] The southbound left-turn consists of dual lanes. The storage reported is the average of both lanes.

[47] The eastbound left-turn consists of dual lanes. The storage reported is the average of both lanes.

[48] The westbound left-turn consists of dual lanes. The storage reported is the average of both lanes.

TABLE 9-2 (CONTINUED)

YEAR 2029 CUMULATIVE PLUS PROJECT PEAK HOUR INTERSECTION QUEUING ANALYSIS[49]

Key Intersection	Storage Provided (feet)	(1) Year 2029 Cumulative Traffic Conditions				(2) Year 2029 Cumulative Plus Project Traffic Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)
10. Clark Avenue at Wardlow Road (Continued)									
Northbound Through/Right-Turn	1,190'	171'	Yes	116'	Yes	172'	Yes	117'	Yes
Southbound Left-Turn	295'	55'	Yes	56'	Yes	56'	Yes	59'	Yes
Southbound Through	1,150'	99'	Yes	64'	Yes	100'	Yes	64'	Yes
Southbound Through/Right-Turn	1,150'	102'	Yes	67'	Yes	103'	Yes	68'	Yes
Eastbound Left-Turn	175'	78'	Yes	117'	Yes	78'	Yes	117'	Yes
Eastbound Through	1,440'	118'	Yes	199'	Yes	117'	Yes	198'	Yes
Eastbound Through/Right-Turn	1,440'	114'	Yes	195'	Yes	114'	Yes	195'	Yes
Westbound Left-Turn/Through	200'	**327'**	**No**	138'	Yes	**329'**	**No**	140'	Yes
Westbound Through/Right-Turn	200'	**338'**	**No**	162'	Yes	**338'**	**No**	163'	Yes

Notes:

- **Bold** storage values indicate the anticipated queue exceeds the existing provided storage

[49] Queues are based on HCM 95th Percentile methodology.

10.0 AREA-WIDE TRAFFIC IMPROVEMENTS

10.1 Recommended Improvements

For those intersections where projected traffic volumes are expected to result in poor operating conditions, this report identifies roadway improvements that are expected to:

- Accommodate the LOS deficiencies and/or lane queuing deficiencies that would result from added Project traffic and future non-project (ambient growth and cumulative project) traffic in combination with existing traffic; and/or
- Improve Levels of Service to an acceptable range and/or to pre-project conditions.

10.1.1 *Existing Plus Project Traffic Conditions*

The results of the Existing Plus Project traffic conditions level of service analyses indicate that the proposed Project will not have an effect on the LOS at any of the ten (10) key study intersections. All ten (10) key study intersections are forecast to operate at acceptable service levels under Existing Plus Project traffic conditions. As such, no improvement measures have been recommended.

10.1.2 *Year 2029 Cumulative Plus Project Traffic Conditions*

The results of the Year 2029 Cumulative Plus Project traffic conditions level of service analyses indicate that the proposed Project will not have an effect on the LOS at any of the ten (10) key study intersections. All ten (10) key study intersections are forecast to operate at acceptable service levels under Year 2029 Cumulative Plus Project traffic conditions. As such, no improvement measures have been recommended.

11.0 VEHICLE MILES TRAVELED (VMT) ANALYSIS

The purpose of this Vehicle Miles Traveled (VMT) analysis is to evaluate the Project based on Senate Bill 743 (SB 743) requirements consistent with the *Technical Advisory on Evaluating Transportation Impacts In California Environmental Quality Act* (CEQA), December 2018, prepared by the State of California Governor's Office of Planning and Research (OPR). The OPR Technical Advisory provides project screening criteria and guidance for analysis of VMT assessments under SB 743. With the adopted guidelines, transportation impacts are to be evaluated based on a project's effect on vehicle miles traveled, which took effect July 1, 2020, as required in CEQA section 15064.3.

The *City of Long Beach Traffic Impact Analysis Guidelines, dated June 2020,* was used in this assessment. Based on the City's guidelines, a VMT analysis is required whenever there is potential for a significant impact under local policy or CEQA.

The City VMT guidelines include screening criteria, thresholds of significance, methodologies, and mitigation measures for development projects. The screening criteria enables a variety of projects to be screened out of complicated VMT analyses and therefore resulting in a less-than significant VMT impact. The conditions of land developments to be screened out may be the size, location, proximity to transit, or trip making potential. Land development projects that have one or more of the following attributes may be presumed to create a less than significant impact:

- ***Screening and Thresholds for Other Land Uses –*** The development of institutional/government and public service uses that support community health, safety, and welfare will be presumed to have a less than significant transportation impact.

  As stated previously, the proposed Project consists of the construction of a new state-of-the-art Stadium and Athletic Sports Complex. The proposed Project will be used by campus students and staff, and the current classes/programs/events that now occur on campus are expected to continue at the new facility. In addition, the existing uses that currently occur within existing Buildings Q, R and S will all be contained within the Stadium and Athletic Sports Complex. The existing LBCCD Liberal Arts Campus is a local serving community college (i.e. institutional land use) and with the proposed Project will continue to the serve the community. Lastly, it should be noted that while the Project trip generation reflects the average daily trips (ADT) associated with 501 new students (i.e. 576 ADT), the daily trip generation forecast is overly conservative based on a projected 95% enrollment for all classes, such that the daily trip generation will very likely be much less than the 500 daily trip VMT daily trip threshold. Therefore, given that the proposed Project is an institutional land use and will very likely generate less than 500 daily trips, it is presumed to have a less than significant impact on VMT based on this screening criteria.

APPENDIX A

EXISTING TRAFFIC COUNT DATA

Transportation Studies, Inc
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: LONG BEACH
N-S Direction: LAKEWOOD BOULEVARD
E-W Direction: CARSON STREET

File Name : H2403005
Site Code : 00000000
Start Date : 3/6/2024

Groups Printed- Turning Movement Count

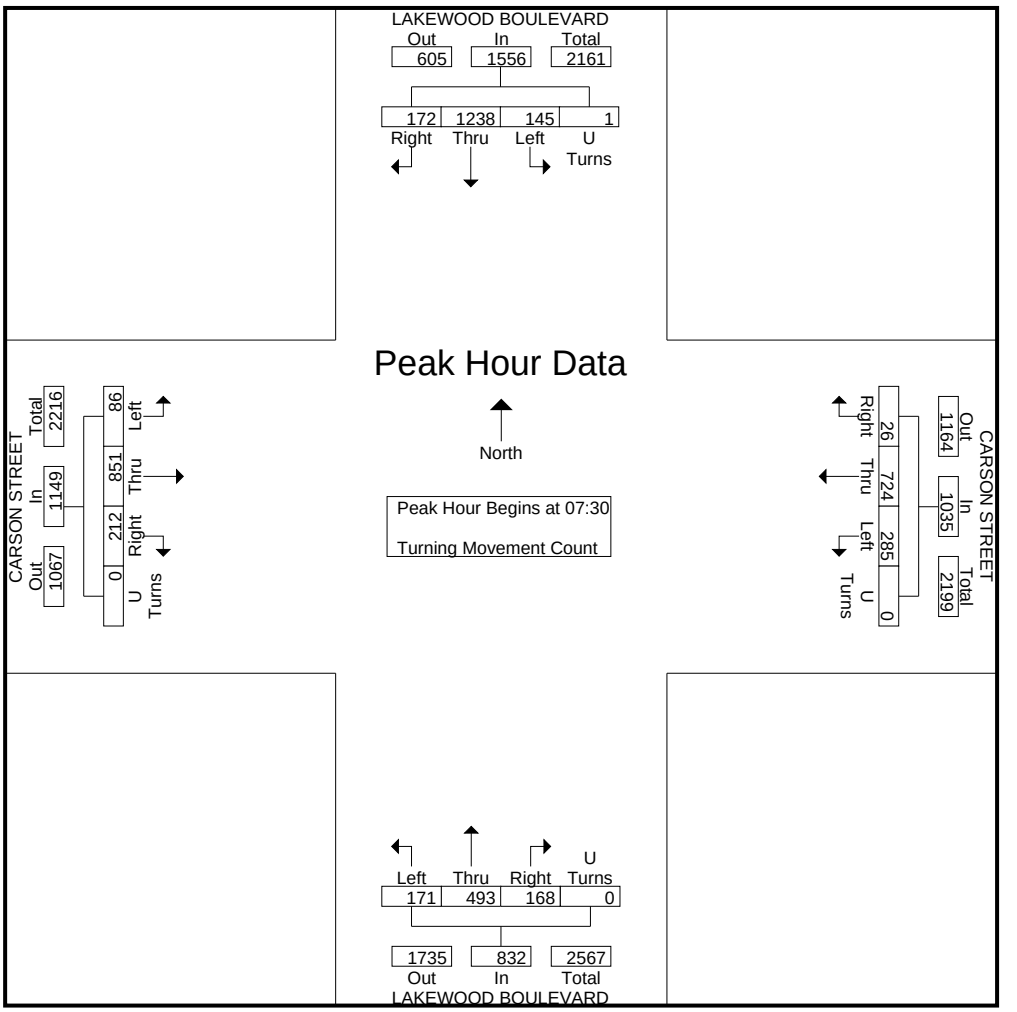
	LAKEWOOD BOULEVARD Southbound				CARSON STREET Westbound				LAKEWOOD BOULEVARD Northbound				CARSON STREET Eastbound				
Start Time	Right	Thru	Left	U Turns	Right	Thru	Left	U Turns	Right	Thru	Left	U Turns	Right	Thru	Left	U Turns	Int. Total
07:00	21	205	19	0	5	97	51	0	31	82	15	0	28	74	15	0	643
07:15	23	231	27	0	5	146	68	0	21	113	36	0	38	111	10	1	830
07:30	31	347	42	0	8	136	73	0	36	121	34	0	57	176	24	0	1085
07:45	53	299	39	0	5	216	78	0	46	119	33	0	54	231	22	0	1195
Total	128	1082	127	0	23	595	270	0	134	435	118	0	177	592	71	1	3753
08:00	55	335	40	1	8	171	58	0	49	118	59	0	48	200	22	0	1164
08:15	33	257	24	0	5	201	76	0	37	135	45	0	53	244	18	0	1128
08:30	53	281	34	0	8	160	51	0	33	143	48	0	31	185	30	0	1057
08:45	31	212	31	0	6	236	78	0	49	161	56	0	36	149	19	0	1064
Total	172	1085	129	1	27	768	263	0	168	557	208	0	168	778	89	0	4413
16:00	26	168	22	0	14	174	57	0	60	247	73	0	40	234	63	0	1178
16:15	29	156	18	1	20	176	58	0	67	273	65	0	35	182	56	0	1136
16:30	38	132	14	0	11	149	44	0	66	234	47	0	45	252	72	0	1104
16:45	23	143	13	0	25	159	58	0	73	282	82	0	54	222	57	0	1191
Total	116	599	67	1	70	658	217	0	266	1036	267	0	174	890	248	0	4609
17:00	23	173	25	0	10	150	53	0	83	235	54	0	61	249	106	0	1222
17:15	23	154	18	0	20	164	57	1	70	267	70	0	37	230	88	0	1199
17:30	25	162	23	0	17	182	50	0	65	247	58	0	44	231	77	0	1181
17:45	22	139	17	0	18	169	47	0	60	252	55	0	40	199	45	0	1063
Total	93	628	83	0	65	665	207	1	278	1001	237	0	182	909	316	0	4665
Grand Total	509	3394	406	2	185	2686	957	1	846	3029	830	0	701	3169	724	1	17440
Apprch %	11.8	78.7	9.4	0	4.8	70.1	25	0	18	64.4	17.6	0	15.3	69	15.8	0	
Total %	2.9	19.5	2.3	0	1.1	15.4	5.5	0	4.9	17.4	4.8	0	4	18.2	4.2	0	

Transportation Studies, Inc
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: LONG BEACH
N-S Direction: LAKEWOOD BOULEVARD
E-W Direction: CARSON STREET

File Name : H2403005
Site Code : 00000000
Start Date : 3/6/2024

	LAKEWOOD BOULEVARD Southbound					CARSON STREET Westbound					LAKEWOOD BOULEVARD Northbound					CARSON STREET Eastbound					
Start Time	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30																					
07:30	31	347	42	0	420	8	136	73	0	217	36	121	34	0	191	57	176	24	0	257	1085
07:45	53	299	39	0	391	5	216	78	0	299	46	119	33	0	198	54	231	22	0	307	1195
08:00	55	335	40	1	431	8	171	58	0	237	49	118	59	0	226	48	200	22	0	270	1164
08:15	33	257	24	0	314	5	201	76	0	282	37	135	45	0	217	53	244	18	0	315	1128
Total Volume	172	1238	145	1	1556	26	724	285	0	1035	168	493	171	0	832	212	851	86	0	1149	4572
% App. Total	11.1	79.6	9.3	0.1		2.5	70	27.5	0		20.2	59.3	20.6	0		18.5	74.1	7.5	0		
PHF	.782	.892	.863	.250	.903	.813	.838	.913	.000	.865	.857	.913	.725	.000	.920	.930	.872	.896	.000	.912	.956

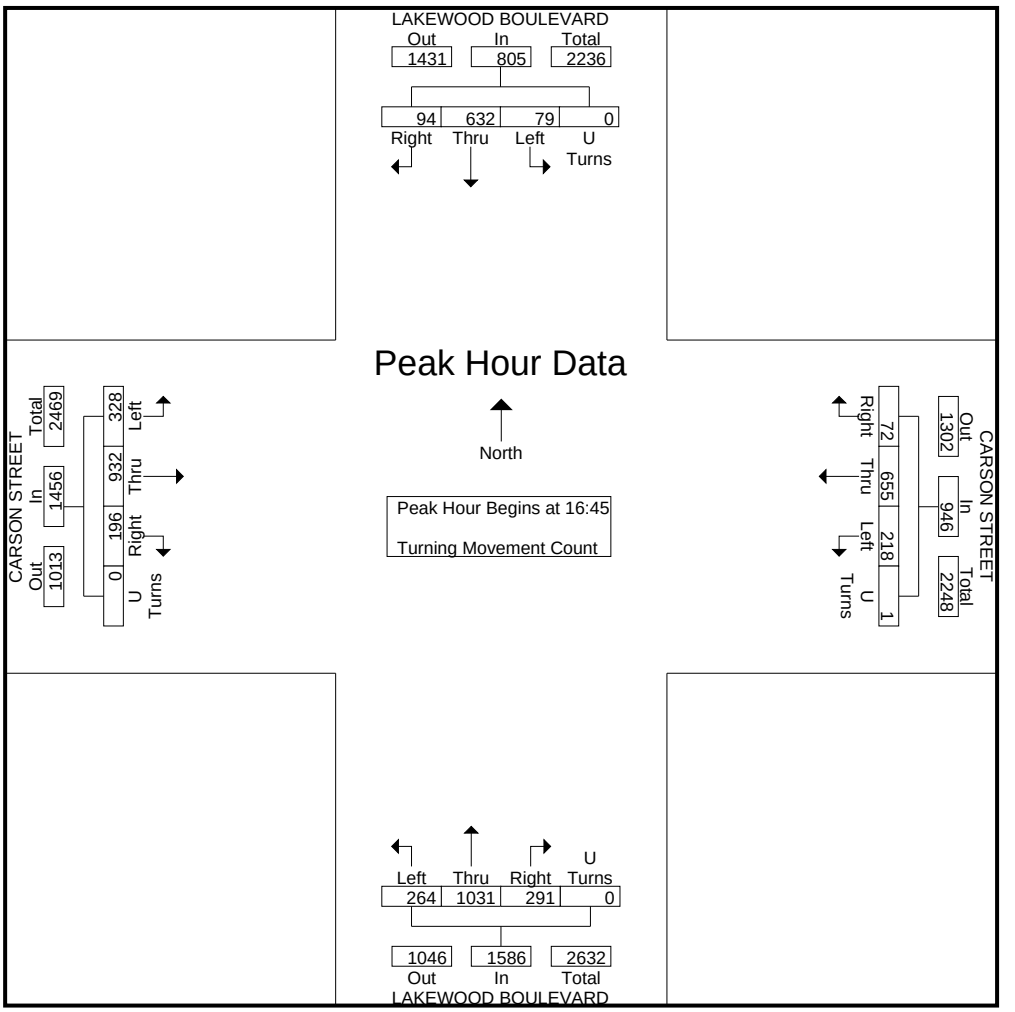


Transportation Studies, Inc
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: LONG BEACH
N-S Direction: LAKEWOOD BOULEVARD
E-W Direction: CARSON STREET

File Name : H2403005
Site Code : 00000000
Start Date : 3/6/2024
Page No : 3

	LAKEWOOD BOULEVARD Southbound					CARSON STREET Westbound					LAKEWOOD BOULEVARD Northbound					CARSON STREET Eastbound					
Start Time	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:45																					
16:45	23	143	13	0	179	25	159	58	0	242	73	282	82	0	437	54	222	57	0	333	1191
17:00	23	173	25	0	221	10	150	53	0	213	83	235	54	0	372	61	249	106	0	416	1222
17:15	23	154	18	0	195	20	164	57	1	242	70	267	70	0	407	37	230	88	0	355	1199
17:30	25	162	23	0	210	17	182	50	0	249	65	247	58	0	370	44	231	77	0	352	1181
Total Volume	94	632	79	0	805	72	655	218	1	946	291	1031	264	0	1586	196	932	328	0	1456	4793
% App. Total	11.7	78.5	9.8	0		7.6	69.2	23	0.1		18.3	65	16.6	0		13.5	64	22.5	0		
PHF	.940	.913	.790	.000	.911	.720	.900	.940	.250	.950	.877	.914	.805	.000	.907	.803	.936	.774	.000	.875	.981



Transportation Studies, Inc
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: LONG BEACH
N-S Direction: FACULTY AVENUE
E-W Direction: CARSON STREET

File Name : H2403006
Site Code : 00000000
Start Date : 3/6/2024
Page No : 1

Groups Printed- Turning Movement Count

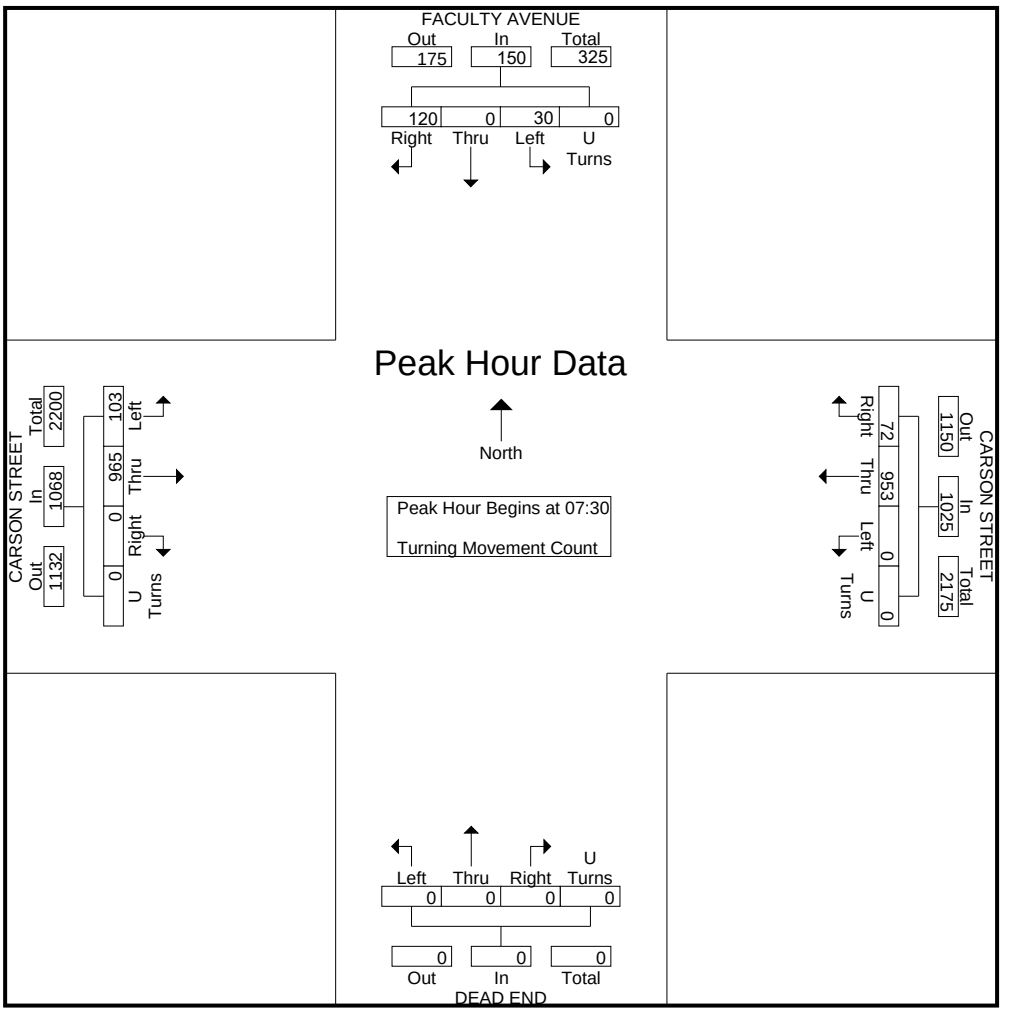
	FACULTY AVENUE Southbound				CARSON STREET Westbound				DEAD END Northbound				CARSON STREET Eastbound				
Start Time	Right	Thru	Left	U Turns	Right	Thru	Left	U Turns	Right	Thru	Left	U Turns	Right	Thru	Left	U Turns	Int. Total
07:00	16	0	8	0	5	173	0	0	0	0	0	0	0	101	10	0	313
07:15	18	0	2	1	9	205	0	0	0	0	0	0	0	121	13	0	369
07:30	34	0	2	0	18	211	0	0	0	0	0	0	0	235	24	0	524
07:45	29	0	14	0	24	274	0	0	0	0	0	0	0	245	38	0	624
Total	97	0	26	1	56	863	0	0	0	0	0	0	0	702	85	0	1830
08:00	40	0	6	0	20	239	0	0	0	0	0	0	0	247	26	0	578
08:15	17	0	8	0	10	229	0	0	0	0	0	0	0	238	15	0	517
08:30	15	0	16	0	14	238	0	0	0	0	0	0	0	226	13	1	523
08:45	18	0	8	0	14	257	0	0	0	0	0	0	0	187	16	0	500
Total	90	0	38	0	58	963	0	0	0	0	0	0	0	898	70	1	2118
16:00	22	0	4	0	17	215	0	0	0	0	0	0	0	308	26	2	594
16:15	12	0	3	0	15	237	0	0	0	0	0	0	0	281	19	2	569
16:30	21	0	3	0	10	191	0	0	0	0	0	0	0	302	21	0	548
16:45	15	0	4	0	10	203	0	0	0	0	0	0	0	304	22	1	559
Total	70	0	14	0	52	846	0	0	0	0	0	0	0	1195	88	5	2270
17:00	21	0	2	0	15	180	0	0	0	0	0	0	0	276	22	3	519
17:15	12	0	3	0	16	253	0	0	0	0	0	0	0	312	16	2	614
17:30	7	0	1	0	8	229	0	0	0	0	0	0	0	294	18	1	558
17:45	11	0	4	0	11	190	0	0	0	0	0	0	0	270	23	1	510
Total	51	0	10	0	50	852	0	0	0	0	0	0	0	1152	79	7	2201
Grand Total	443	0	340	1	216	3524	0	0	0	0	0	0	0	3947	322	13	8806
Apprch %	56.5	0	43.4	0.1	5.8	94.2	0	0	0	0	0	0	0	92.2	7.5	0.3	
Total %	5	0	3.9	0	2.5	40	0	0	0	0	0	0	0	44.8	3.7	0.1	

Transportation Studies, Inc
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: LONG BEACH
N-S Direction: FACULTY AVENUE
E-W Direction: CARSON STREET

File Name : H2403006
Site Code : 00000000
Start Date : 3/6/2024
Page No : 2

	FACULTY AVENUE Southbound					CARSON STREET Westbound					DEAD END Northbound					CARSON STREET Eastbound					
Start Time	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30																					
07:30	34	0	2	0	36	18	211	0	0	229	0	0	0	0	0	0	235	24	0	259	577
07:45	29	0	14	0	43	24	274	0	0	298	0	0	0	0	0	0	245	38	0	283	672
08:00	40	0	6	0	46	20	239	0	0	259	0	0	0	0	0	0	247	26	0	273	630
08:15	17	0	8	0	25	10	229	0	0	239	0	0	0	0	0	0	238	15	0	253	578
Total Volume	120	0	30	0	150	72	953	0	0	1025	0	0	0	0	0	0	965	103	0	1068	2457
% App. Total	80	0	20	0		7	93	0	0		0	0	0	0		0	90.4	9.6	0		
PHF	.973	.000	.889	.000	.929	.750	.870	.000	.000	.860	.000	.000	.000	.000	.000	.000	.977	.678	.000	.943	.914

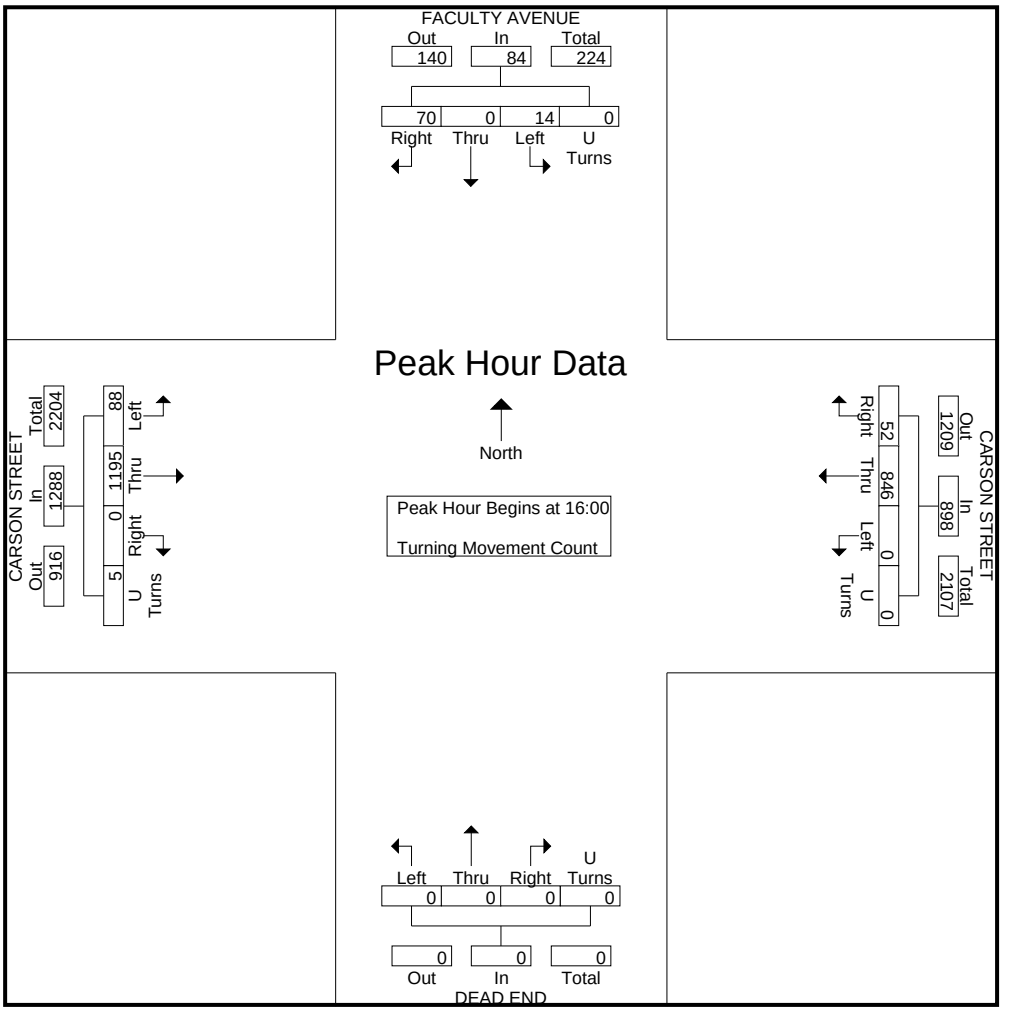


Transportation Studies, Inc
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: LONG BEACH
N-S Direction: FACULTY AVENUE
E-W Direction: CARSON STREET

File Name : H2403006
Site Code : 00000000
Start Date : 3/6/2024
Page No : 3

	FACULTY AVENUE Southbound					CARSON STREET Westbound					DEAD END Northbound					CARSON STREET Eastbound					
Start Time	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:00																					
16:00	22	0	4	0	26	17	215	0	0	232	0	0	0	0	0	0	308	26	2	336	594
16:15	12	0	3	0	15	15	237	0	0	252	0	0	0	0	0	0	281	19	2	302	569
16:30	21	0	3	0	24	10	191	0	0	201	0	0	0	0	0	0	302	21	0	323	548
16:45	15	0	4	0	19	10	203	0	0	213	0	0	0	0	0	0	304	22	1	327	559
Total Volume	70	0	14	0	84	52	846	0	0	898	0	0	0	0	0	0	1195	88	5	1288	2270
% App. Total	83.3	0	16.7	0		5.8	94.2	0	0		0	0	0	0		0	92.8	6.8	0.4		
PHF	.795	.000	.875	.000	.808	.765	.892	.000	.000	.891	.000	.000	.000	.000	.000	.000	.970	.846	.625	.958	.955



Transportation Studies, Inc
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: LONG BEACH
N-S Direction: CLARK AVENUE
E-W Direction: CARSON STREET

File Name : H2403007
Site Code : 00000000
Start Date : 3/6/2024
Page No : 1

Groups Printed- Turning Movement Count

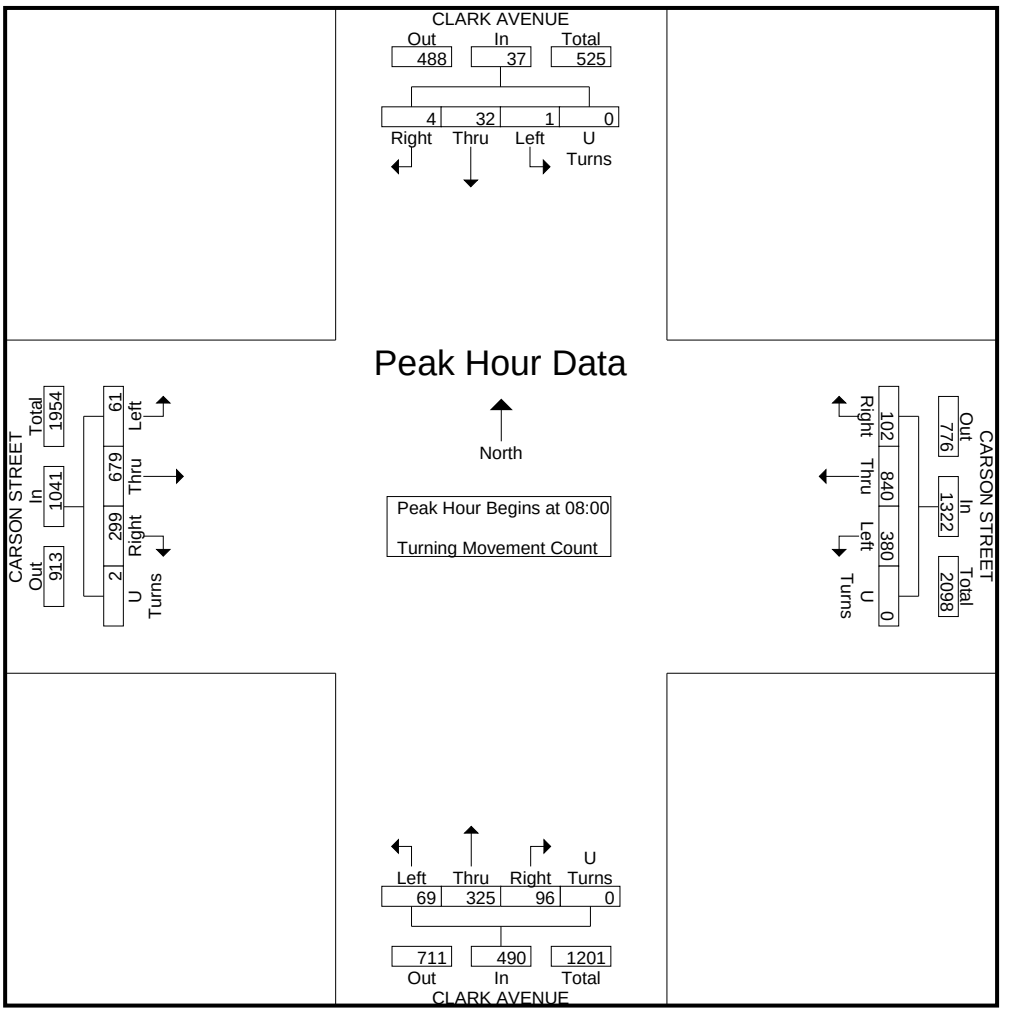
	CLARK AVENUE Southbound				CARSON STREET Westbound				CLARK AVENUE Northbound				CARSON STREET Eastbound				
Start Time	Right	Thru	Left	U Turns	Right	Thru	Left	U Turns	Right	Thru	Left	U Turns	Right	Thru	Left	U Turns	Int. Total
07:00	11	40	12	0	5	190	22	0	11	25	1	0	3	138	1	0	459
07:15	6	39	4	0	6	185	20	0	12	22	4	0	5	131	0	0	434
07:30	5	46	6	0	10	203	28	0	13	22	1	0	11	142	2	0	489
07:45	0	2	0	0	10	229	69	0	18	45	9	0	25	154	10	0	571
Total	22	127	22	0	31	807	139	0	54	114	15	0	44	565	13	0	1953
08:00	0	3	1	0	16	176	75	0	13	37	7	0	18	142	7	0	495
08:15	2	2	0	0	15	181	113	0	15	73	9	0	45	143	17	0	615
08:30	0	6	0	0	23	227	91	0	27	88	16	0	100	195	22	1	796
08:45	2	21	0	0	48	256	101	0	41	127	37	0	136	199	15	1	984
Total	4	32	1	0	102	840	380	0	96	325	69	0	299	679	61	2	2890
16:00	16	91	22	0	20	145	39	0	59	99	26	0	35	224	16	0	792
16:15	19	110	26	0	32	152	22	0	42	124	27	0	31	230	29	0	844
16:30	16	101	18	0	21	168	31	0	37	118	29	0	34	257	26	1	857
16:45	30	118	25	0	22	158	22	0	74	145	39	0	43	239	28	0	943
Total	81	420	91	0	95	623	114	0	212	486	121	0	143	950	99	1	3436
17:00	24	106	20	0	28	157	27	0	91	129	34	0	35	245	21	0	917
17:15	16	106	16	0	19	162	28	0	70	137	33	0	38	194	21	1	841
17:30	15	81	24	0	23	161	28	0	75	116	22	0	29	271	25	1	871
17:45	13	87	16	0	22	132	22	0	71	130	39	0	35	228	33	0	828
Total	68	380	76	0	92	612	105	0	307	512	128	0	137	938	100	2	3457
Grand Total	175	959	190	0	320	2882	738	0	669	1437	333	0	623	3132	273	5	11736
Apprch %	13.2	72.4	14.4	0	8.1	73.1	18.7	0	27.4	58.9	13.7	0	15.4	77.7	6.8	0.1	
Total %	1.5	8.2	1.6	0	2.7	24.6	6.3	0	5.7	12.2	2.8	0	5.3	26.7	2.3	0	

Transportation Studies, Inc
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: LONG BEACH
N-S Direction: CLARK AVENUE
E-W Direction: CARSON STREET

File Name : H2403007
Site Code : 00000000
Start Date : 3/6/2024

	CLARK AVENUE Southbound					CARSON STREET Westbound					CLARK AVENUE Northbound					CARSON STREET Eastbound					
Start Time	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00																					
08:00	0	3	1	0	4	16	176	75	0	267	13	37	7	0	57	18	142	7	0	167	495
08:15	2	2	0	0	4	15	181	113	0	309	15	73	9	0	97	45	143	17	0	205	615
08:30	0	6	0	0	6	23	227	91	0	341	27	88	16	0	131	100	195	22	1	318	796
08:45	2	21	0	0	23	48	256	101	0	405	41	127	37	0	205	136	199	15	1	351	984
Total Volume	4	32	1	0	37	102	840	380	0	1322	96	325	69	0	490	299	679	61	2	1041	2890
% App. Total	10.8	86.5	2.7	0		7.7	63.5	28.7	0		19.6	66.3	14.1	0		28.7	65.2	5.9	0.2		
PHF	.500	.381	.250	.000	.402	.531	.820	.841	.000	.816	.585	.640	.466	.000	.598	.550	.853	.693	.500	.741	.734

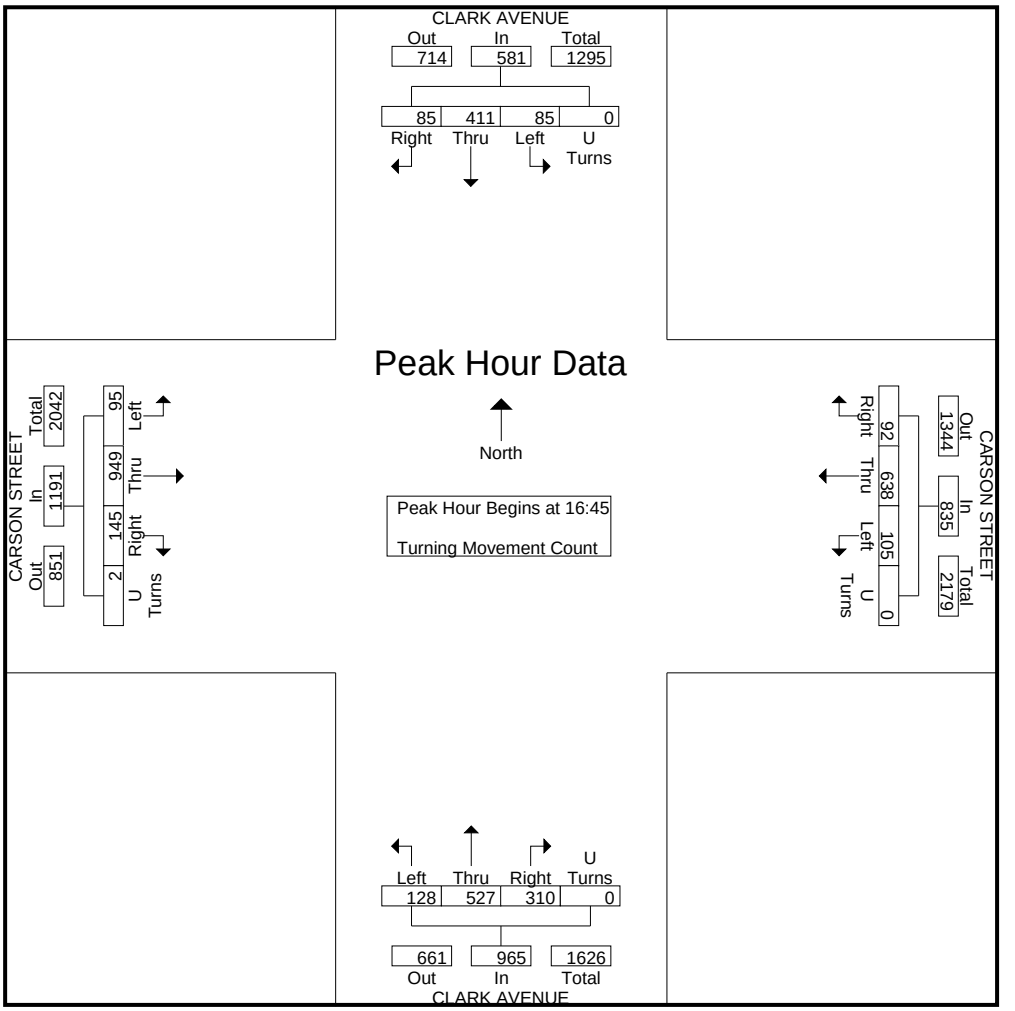


Transportation Studies, Inc
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: LONG BEACH
N-S Direction: CLARK AVENUE
E-W Direction: CARSON STREET

File Name : H2403007
Site Code : 00000000
Start Date : 3/6/2024
Page No : 3

	CLARK AVENUE Southbound					CARSON STREET Westbound					CLARK AVENUE Northbound					CARSON STREET Eastbound					
Start Time	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:45																					
16:45	30	118	25	0	173	22	158	22	0	202	74	145	39	0	258	43	239	28	0	310	943
17:00	24	106	20	0	150	28	157	27	0	212	91	129	34	0	254	35	245	21	0	301	917
17:15	16	106	16	0	138	19	162	28	0	209	70	137	33	0	240	38	194	21	1	254	841
17:30	15	81	24	0	120	23	161	28	0	212	75	116	22	0	213	29	271	25	1	326	871
Total Volume	85	411	85	0	581	92	638	105	0	835	310	527	128	0	965	145	949	95	2	1191	3572
% App. Total	14.6	70.7	14.6	0		11	76.4	12.6	0		32.1	54.6	13.3	0		12.2	79.7	8	0.2		
PHF	.708	.871	.850	.000	.840	.821	.985	.938	.000	.985	.852	.909	.821	.000	.935	.843	.875	.848	.500	.913	.947



Transportation Studies, Inc
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: LONG BEACH
N-S Direction: BELLFLOWER AVENUE
E-W Direction: CARSON STREET

File Name : H2403008
Site Code : 00000000
Start Date : 3/6/2024

Groups Printed- Turning Movement Count

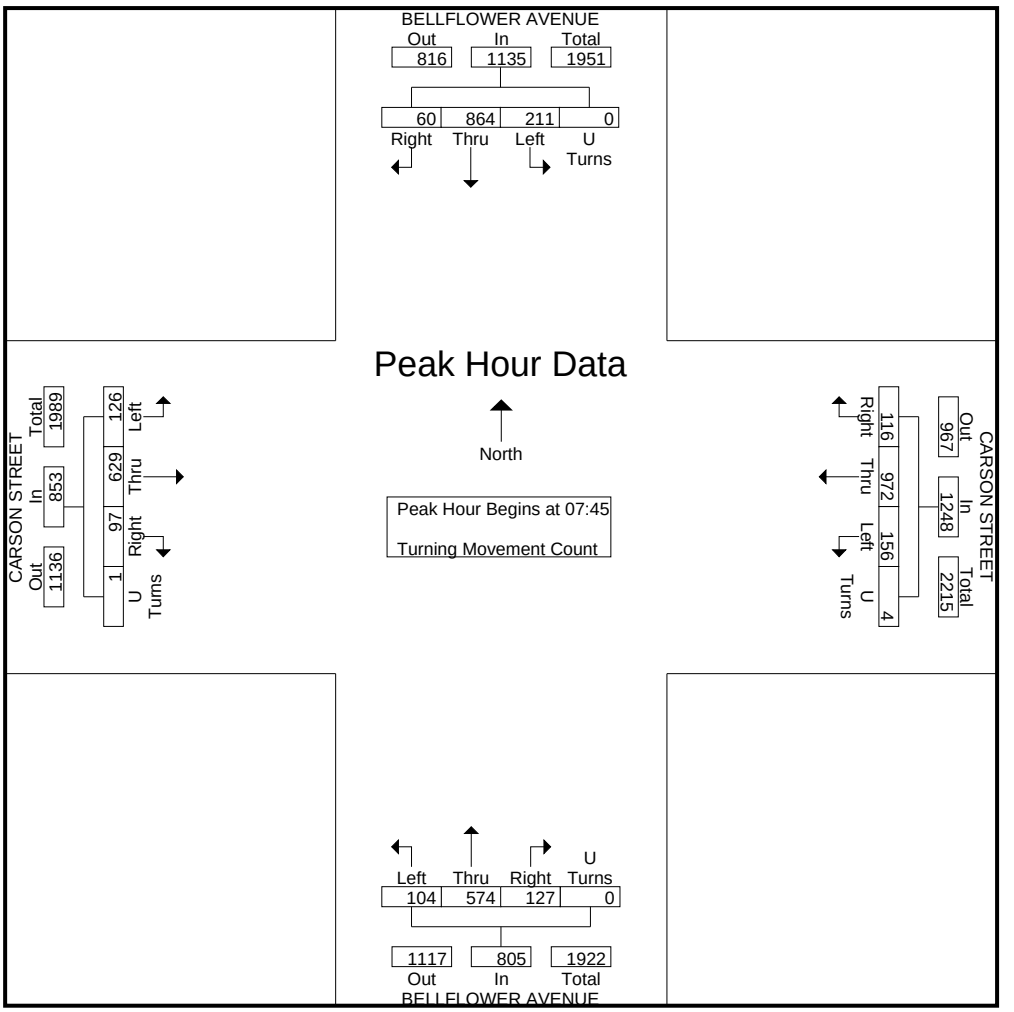
	BELLFLOWER AVENUE Southbound				CARSON STREET Westbound				BELLFLOWER AVENUE Northbound				CARSON STREET Eastbound				
Start Time	Right	Thru	Left	U Turns	Right	Thru	Left	U Turns	Right	Thru	Left	U Turns	Right	Thru	Left	U Turns	Int. Total
07:00	16	140	24	0	8	198	32	0	20	45	12	0	21	79	8	0	603
07:15	12	166	25	0	12	215	25	1	22	76	12	1	15	74	5	1	662
07:30	19	245	32	0	23	277	46	1	35	83	22	0	36	132	19	0	970
07:45	10	263	50	0	24	234	37	1	29	144	28	0	38	122	29	1	1010
Total	57	814	131	0	67	924	140	3	106	348	74	1	110	407	61	2	3245
08:00	18	188	45	0	22	242	44	1	30	150	28	0	25	170	24	0	987
08:15	9	218	61	0	29	215	29	1	46	154	26	0	20	166	41	0	1015
08:30	23	195	55	0	41	281	46	1	22	126	22	0	14	171	32	0	1029
08:45	24	172	43	0	27	207	37	0	28	118	33	0	21	131	19	0	860
Total	74	773	204	0	119	945	156	3	126	548	109	0	80	638	116	0	3891
16:00	21	132	23	0	39	146	31	0	38	254	41	0	20	235	39	2	1021
16:15	14	118	26	0	34	178	33	3	31	216	38	0	27	269	40	0	1027
16:30	18	143	29	0	26	150	28	3	31	205	23	0	24	237	35	0	952
16:45	14	102	33	1	23	144	32	0	40	203	34	0	26	294	31	0	977
Total	67	495	111	1	122	618	124	6	140	878	136	0	97	1035	145	2	3977
17:00	10	129	22	0	39	160	33	0	43	205	28	0	19	264	43	0	995
17:15	14	100	20	0	44	195	26	3	27	237	37	0	23	303	40	0	1069
17:30	21	116	28	0	37	157	31	0	31	208	32	0	30	230	40	0	961
17:45	18	94	27	2	28	173	14	3	27	176	31	0	25	253	38	2	911
Total	63	439	97	2	148	685	104	6	128	826	128	0	97	1050	161	2	3936
Grand Total	261	2521	543	3	456	3172	524	18	500	2600	447	1	384	3130	483	6	15049
Apprch %	7.8	75.8	16.3	0.1	10.9	76.1	12.6	0.4	14.1	73.3	12.6	0	9.6	78.2	12.1	0.1	
Total %	1.7	16.8	3.6	0	3	21.1	3.5	0.1	3.3	17.3	3	0	2.6	20.8	3.2	0	

Transportation Studies, Inc
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: LONG BEACH
N-S Direction: BELLFLOWER AVENUE
E-W Direction: CARSON STREET

File Name : H2403008
Site Code : 00000000
Start Date : 3/6/2024

	BELLFLOWER AVENUE Southbound					CARSON STREET Westbound					BELLFLOWER AVENUE Northbound					CARSON STREET Eastbound					
Start Time	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45																					
07:45	10	263	50	0	323	24	234	37	1	296	29	144	28	0	201	38	122	29	1	190	1010
08:00	18	188	45	0	251	22	242	44	1	309	30	150	28	0	208	25	170	24	0	219	987
08:15	9	218	61	0	288	29	215	29	1	274	46	154	26	0	226	20	166	41	0	227	1015
08:30	23	195	55	0	273	41	281	46	1	369	22	126	22	0	170	14	171	32	0	217	1029
Total Volume	60	864	211	0	1135	116	972	156	4	1248	127	574	104	0	805	97	629	126	1	853	4041
% App. Total	5.3	76.1	18.6	0		9.3	77.9	12.5	0.3		15.8	71.3	12.9	0		11.4	73.7	14.8	0.1		
PHF	.652	.821	.865	.000	.878	.707	.865	.848	1.00	.846	.690	.932	.929	.000	.890	.638	.920	.768	.250	.939	.982

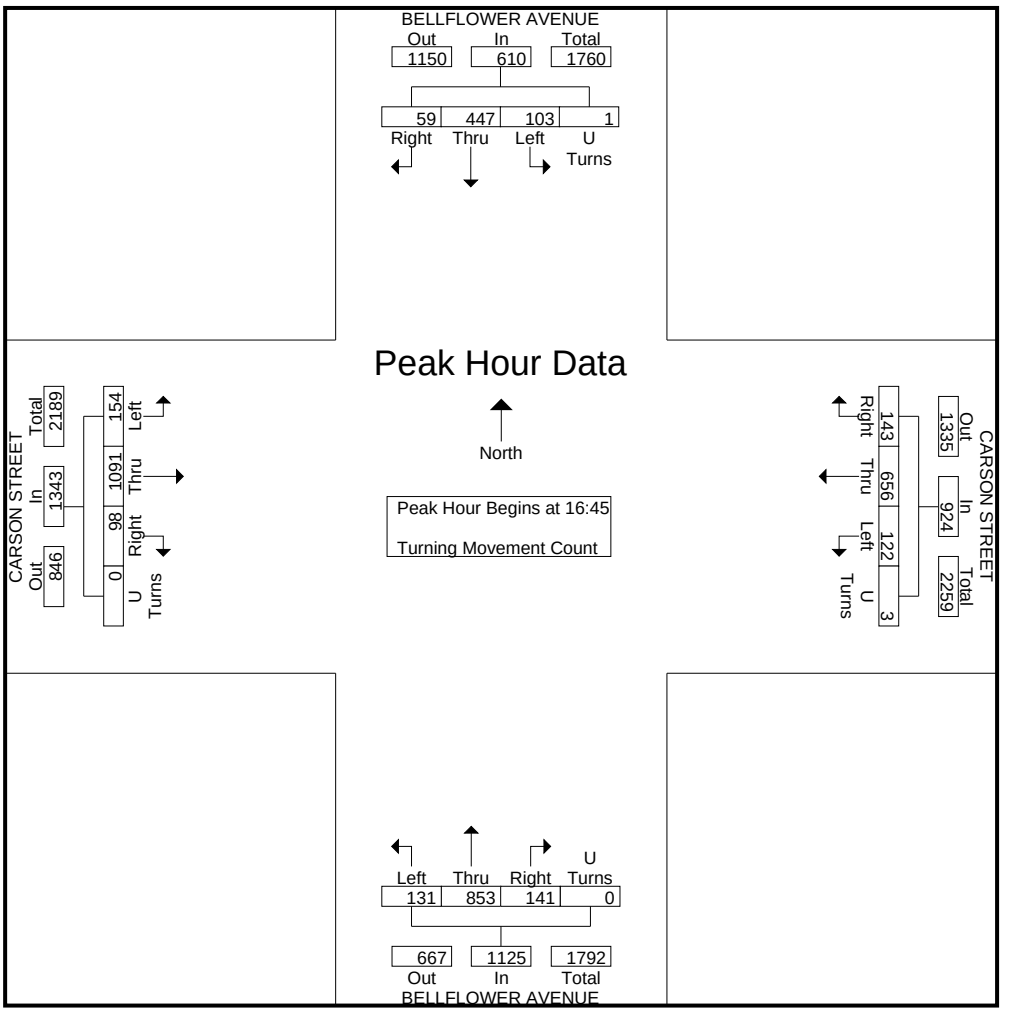


Transportation Studies, Inc
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: LONG BEACH
N-S Direction: BELLFLOWER AVENUE
E-W Direction: CARSON STREET

File Name : H2403008
Site Code : 00000000
Start Date : 3/6/2024
Page No : 3

	BELLFLOWER AVENUE Southbound					CARSON STREET Westbound					BELLFLOWER AVENUE Northbound					CARSON STREET Eastbound					
Start Time	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:45																					
16:45	14	102	33	1	150	23	144	32	0	199	40	203	34	0	277	26	294	31	0	351	977
17:00	10	129	22	0	161	39	160	33	0	232	43	205	28	0	276	19	264	43	0	326	995
17:15	14	100	20	0	134	44	195	26	3	268	27	237	37	0	301	23	303	40	0	366	1069
17:30	21	116	28	0	165	37	157	31	0	225	31	208	32	0	271	30	230	40	0	300	961
Total Volume	59	447	103	1	610	143	656	122	3	924	141	853	131	0	1125	98	1091	154	0	1343	4002
% App. Total	9.7	73.3	16.9	0.2		15.5	71	13.2	0.3		12.5	75.8	11.6	0		7.3	81.2	11.5	0		
PHF	.702	.866	.780	.250	.924	.813	.841	.924	.250	.862	.820	.900	.885	.000	.934	.817	.900	.895	.000	.917	.936



Transportation Studies, Inc
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: LONG BEACH
N-S Direction: CLARK AVENUE
E-W Direction: E. LEW DAVIS STREET

File Name : H2403010
Site Code : 00000000
Start Date : 3/6/2024
Page No : 1

Groups Printed- Turning Movement Count

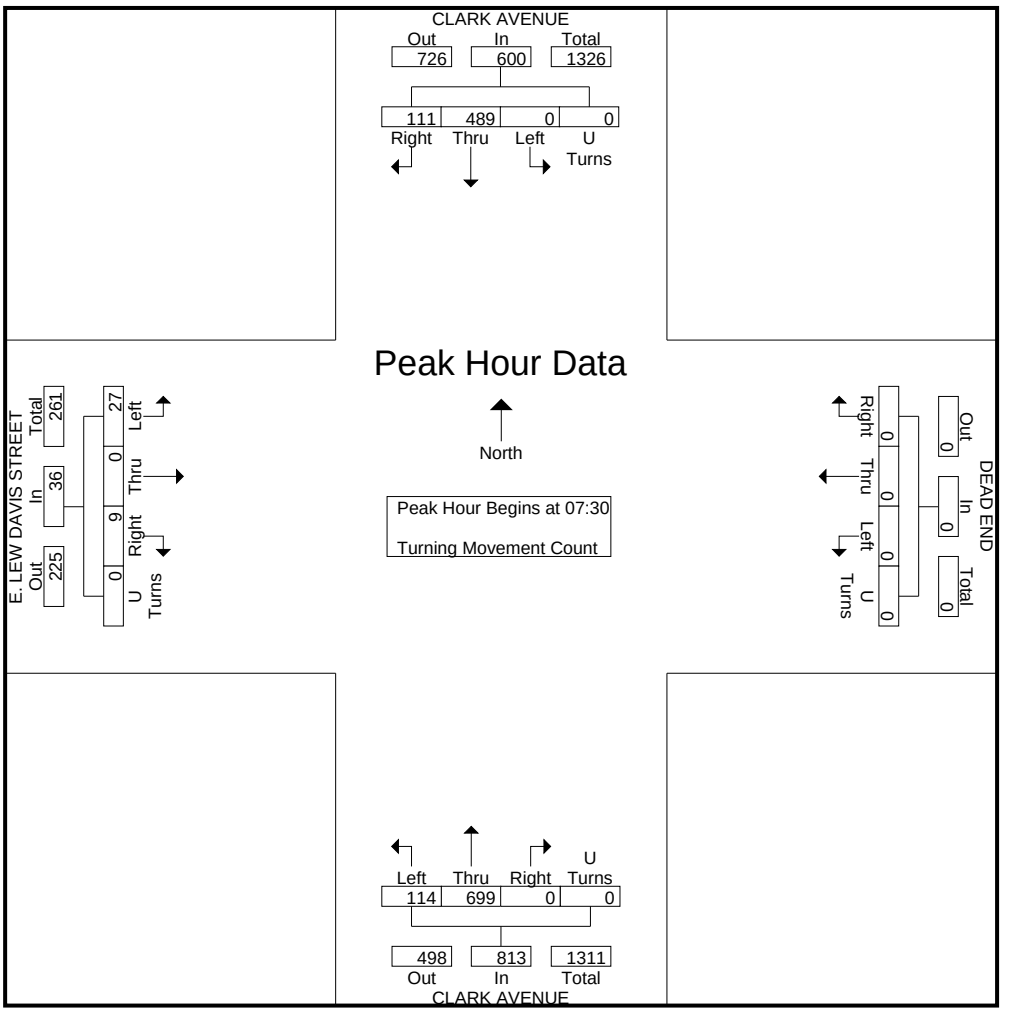
	CLARK AVENUE Southbound				DEAD END Westbound				CLARK AVENUE Northbound				E. LEW DAVIS STREET Eastbound				
Start Time	Right	Thru	Left	U Turns	Right	Thru	Left	U Turns	Right	Thru	Left	U Turns	Right	Thru	Left	U Turns	Int. Total
07:00	10	82	0	0	0	0	0	0	0	64	6	0	2	0	1	0	165
07:15	15	122	0	0	0	0	0	0	0	103	11	0	2	0	2	0	255
07:30	22	107	0	0	0	0	0	0	0	168	36	0	1	0	2	0	336
07:45	28	140	0	0	0	0	0	0	0	201	36	0	5	0	12	0	422
Total	75	451	0	0	0	0	0	0	0	536	89	0	10	0	17	0	1178
08:00	45	131	0	0	0	0	0	0	0	170	28	0	1	0	10	0	385
08:15	16	111	0	0	0	0	0	0	0	160	14	0	2	0	3	0	306
08:30	21	115	0	0	0	0	0	0	0	142	19	0	1	0	10	0	308
08:45	30	94	0	0	0	0	0	0	0	128	19	1	3	0	7	0	282
Total	112	451	0	0	0	0	0	0	0	600	80	1	7	0	30	0	1281
16:00	19	165	0	1	0	0	0	0	0	192	15	0	35	0	63	0	490
16:15	17	145	0	0	0	0	0	0	0	197	20	0	20	0	39	0	438
16:30	16	133	0	0	0	0	0	0	0	211	7	0	25	0	36	0	428
16:45	6	114	0	0	0	0	0	0	0	204	8	0	14	0	33	0	379
Total	58	557	0	1	0	0	0	0	0	804	50	0	94	0	171	0	1735
17:00	6	141	0	0	0	0	0	0	0	223	4	0	20	0	43	0	437
17:15	15	128	0	0	0	0	0	0	0	252	4	0	20	0	34	0	453
17:30	11	165	0	0	0	0	0	0	0	240	7	0	19	0	38	0	480
17:45	19	101	0	0	0	0	0	0	0	184	11	0	12	0	35	0	362
Total	51	535	0	0	0	0	0	0	0	899	26	0	71	0	150	0	1732
Grand Total	296	1994	0	1	0	0	0	0	0	2839	245	1	182	0	368	0	5926
Apprch %	12.9	87	0	0	0	0	0	0	0	92	7.9	0	33.1	0	66.9	0	
Total %	5	33.6	0	0	0	0	0	0	0	47.9	4.1	0	3.1	0	6.2	0	

Transportation Studies, Inc
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: LONG BEACH
N-S Direction: CLARK AVENUE
E-W Direction: E. LEW DAVIS STREET

File Name : H2403010
Site Code : 00000000
Start Date : 3/6/2024

	CLARK AVENUE Southbound					DEAD END Westbound					CLARK AVENUE Northbound					E. LEW DAVIS STREET Eastbound					
Start Time	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30																					
07:30	22	107	0	0	129	0	0	0	0	0	0	168	36	0	204	1	0	2	0	3	336
07:45	28	140	0	0	168	0	0	0	0	0	0	201	36	0	237	5	0	12	0	17	422
08:00	45	131	0	0	176	0	0	0	0	0	0	170	28	0	198	1	0	10	0	11	385
08:15	16	111	0	0	127	0	0	0	0	0	0	160	14	0	174	2	0	3	0	5	306
Total Volume	111	489	0	0	600	0	0	0	0	0	0	699	114	0	813	9	0	27	0	36	1449
% App. Total	18.5	81.5	0	0		0	0	0	0		0	86	14	0		25	0	75	0		
PHF	.617	.873	.000	.000	.852	.000	.000	.000	.000	.000	.000	.869	.792	.000	.858	.450	.000	.563	.000	.529	.858

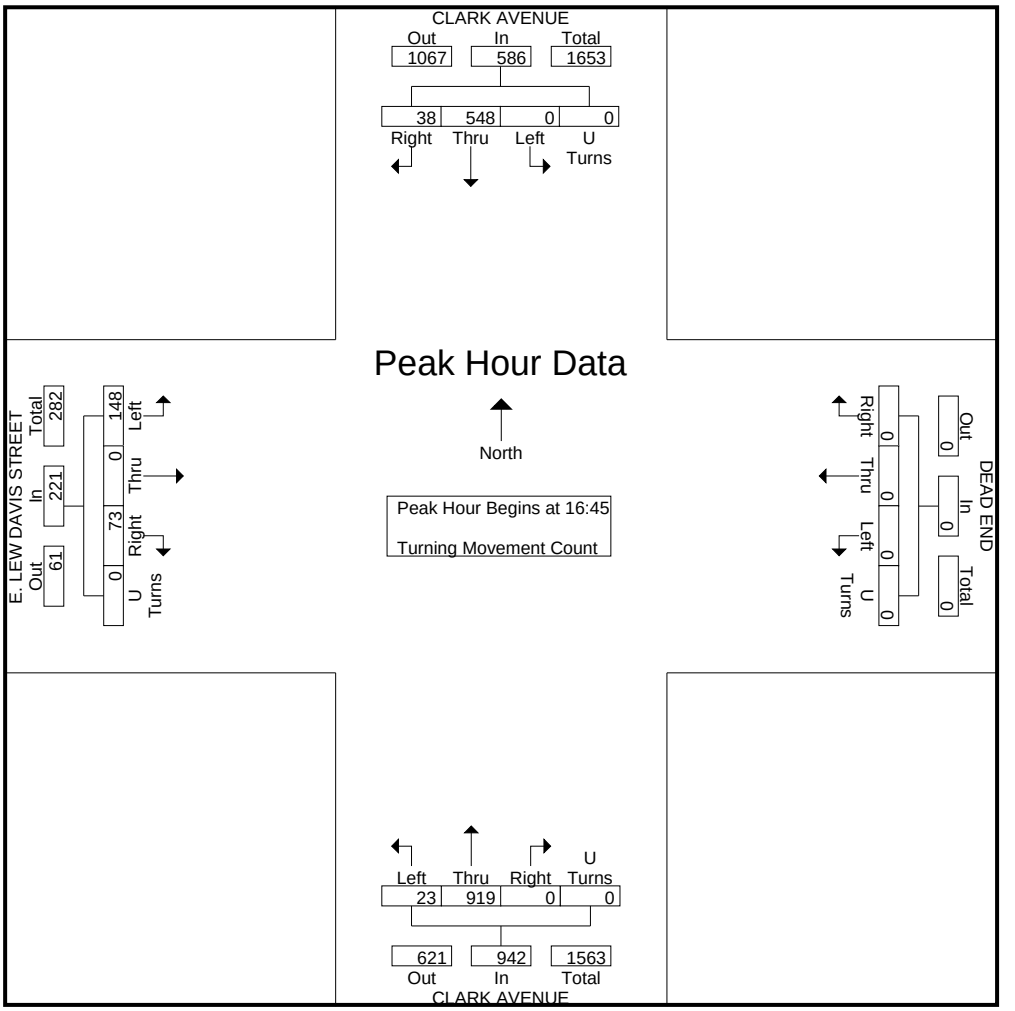


Transportation Studies, Inc
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: LONG BEACH
N-S Direction: CLARK AVENUE
E-W Direction: E. LEW DAVIS STREET

File Name : H2403010
Site Code : 00000000
Start Date : 3/6/2024

	CLARK AVENUE Southbound					DEAD END Westbound					CLARK AVENUE Northbound					E. LEW DAVIS STREET Eastbound					
Start Time	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:45																					
16:45	6	114	0	0	120	0	0	0	0	0	0	204	8	0	212	14	0	33	0	47	379
17:00	6	141	0	0	147	0	0	0	0	0	0	223	4	0	227	20	0	43	0	63	437
17:15	15	128	0	0	143	0	0	0	0	0	0	252	4	0	256	20	0	34	0	54	453
17:30	11	165	0	0	176	0	0	0	0	0	0	240	7	0	247	19	0	38	0	57	480
Total Volume	38	548	0	0	586	0	0	0	0	0	0	919	23	0	942	73	0	148	0	221	1749
% App. Total	6.5	93.5	0	0		0	0	0	0		0	97.6	2.4	0		33	0	67	0		
PHF	.633	.830	.000	.000	.832	.000	.000	.000	.000	.000	.000	.912	.719	.000	.920	.913	.000	.860	.000	.877	.911



Transportation Studies, Inc
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: LONG BEACH
N-S Direction: LAKEWOOD BOULEVARD
E-W Direction: CONANT STREET

File Name : H2403011
Site Code : 00000000
Start Date : 3/6/2024
Page No : 1

Groups Printed- Turning Movement Count

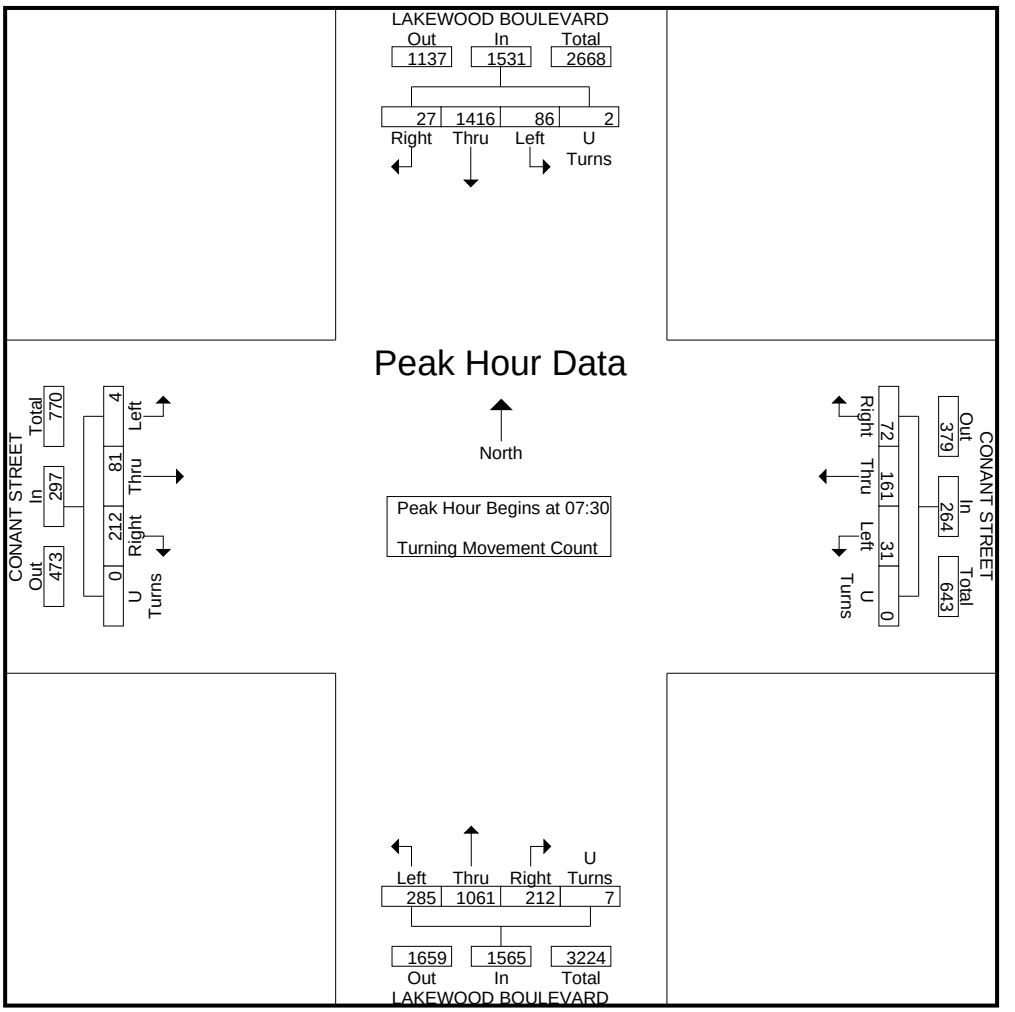
	LAKEWOOD BOULEVARD Southbound				CONANT STREET Westbound				LAKEWOOD BOULEVARD Northbound				CONANT STREET Eastbound				
Start Time	Right	Thru	Left	U Turns	Right	Thru	Left	U Turns	Right	Thru	Left	U Turns	Right	Thru	Left	U Turns	Int. Total
07:00	6	197	21	0	1	24	1	0	44	198	58	0	21	24	2	0	597
07:15	7	281	15	0	9	35	8	0	29	222	73	1	40	15	2	0	737
07:30	7	385	20	1	11	26	4	0	45	236	67	2	49	31	0	0	884
07:45	5	301	29	0	26	58	13	0	82	272	87	1	44	21	3	0	942
Total	25	1164	85	1	47	143	26	0	200	928	285	4	154	91	7	0	3160
08:00	11	391	23	0	18	46	11	0	45	268	71	0	57	17	1	0	959
08:15	4	339	14	1	17	31	3	0	40	285	60	4	62	12	0	0	872
08:30	4	302	15	0	15	31	7	0	27	250	60	3	51	24	3	0	792
08:45	4	214	13	0	13	26	10	0	47	282	62	3	26	12	2	0	714
Total	23	1246	65	1	63	134	31	0	159	1085	253	10	196	65	6	0	3337
16:00	3	265	13	0	30	48	36	0	18	320	34	1	93	35	10	0	906
16:15	4	263	13	2	23	33	20	1	22	307	32	0	67	23	2	0	812
16:30	2	259	10	0	23	35	33	0	21	350	37	2	92	29	8	0	901
16:45	0	246	16	0	13	21	26	0	15	315	37	1	84	21	1	0	796
Total	9	1033	52	2	89	137	115	1	76	1292	140	4	336	108	21	0	3415
17:00	1	266	21	0	18	26	20	0	12	344	36	1	105	55	8	0	913
17:15	2	261	12	0	21	33	24	0	9	309	31	1	79	24	6	0	812
17:30	2	250	9	2	24	44	22	0	18	293	43	1	73	31	4	0	816
17:45	1	197	11	0	14	24	11	0	20	302	41	1	51	19	5	0	697
Total	6	974	53	2	77	127	77	0	59	1248	151	4	308	129	23	0	3238
Grand Total	63	4417	255	6	276	541	249	1	494	4553	829	22	994	393	57	0	13150
Apprch %	1.3	93.2	5.4	0.1	25.9	50.7	23.3	0.1	8.4	77.2	14.1	0.4	68.8	27.2	3.9	0	
Total %	0.5	33.6	1.9	0	2.1	4.1	1.9	0	3.8	34.6	6.3	0.2	7.6	3	0.4	0	

Transportation Studies, Inc
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: LONG BEACH
N-S Direction: LAKEWOOD BOULEVARD
E-W Direction: CONANT STREET

File Name : H2403011
Site Code : 00000000
Start Date : 3/6/2024

	LAKEWOOD BOULEVARD Southbound					CONANT STREET Westbound					LAKEWOOD BOULEVARD Northbound					CONANT STREET Eastbound					
Start Time	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30																					
07:30	7	385	20	1	413	11	26	4	0	41	45	236	67	2	350	49	31	0	0	80	884
07:45	5	301	29	0	335	26	58	13	0	97	82	272	87	1	442	44	21	3	0	68	942
08:00	11	391	23	0	425	18	46	11	0	75	45	268	71	0	384	57	17	1	0	75	959
08:15	4	339	14	1	358	17	31	3	0	51	40	285	60	4	389	62	12	0	0	74	872
Total Volume	27	1416	86	2	1531	72	161	31	0	264	212	1061	285	7	1565	212	81	4	0	297	3657
% App. Total	1.8	92.5	5.6	0.1		27.3	61	11.7	0		13.5	67.8	18.2	0.4		71.4	27.3	1.3	0		
PHF	.614	.905	.741	.500	.901	.692	.694	.596	.000	.680	.646	.931	.819	.438	.885	.855	.653	.333	.000	.928	.953

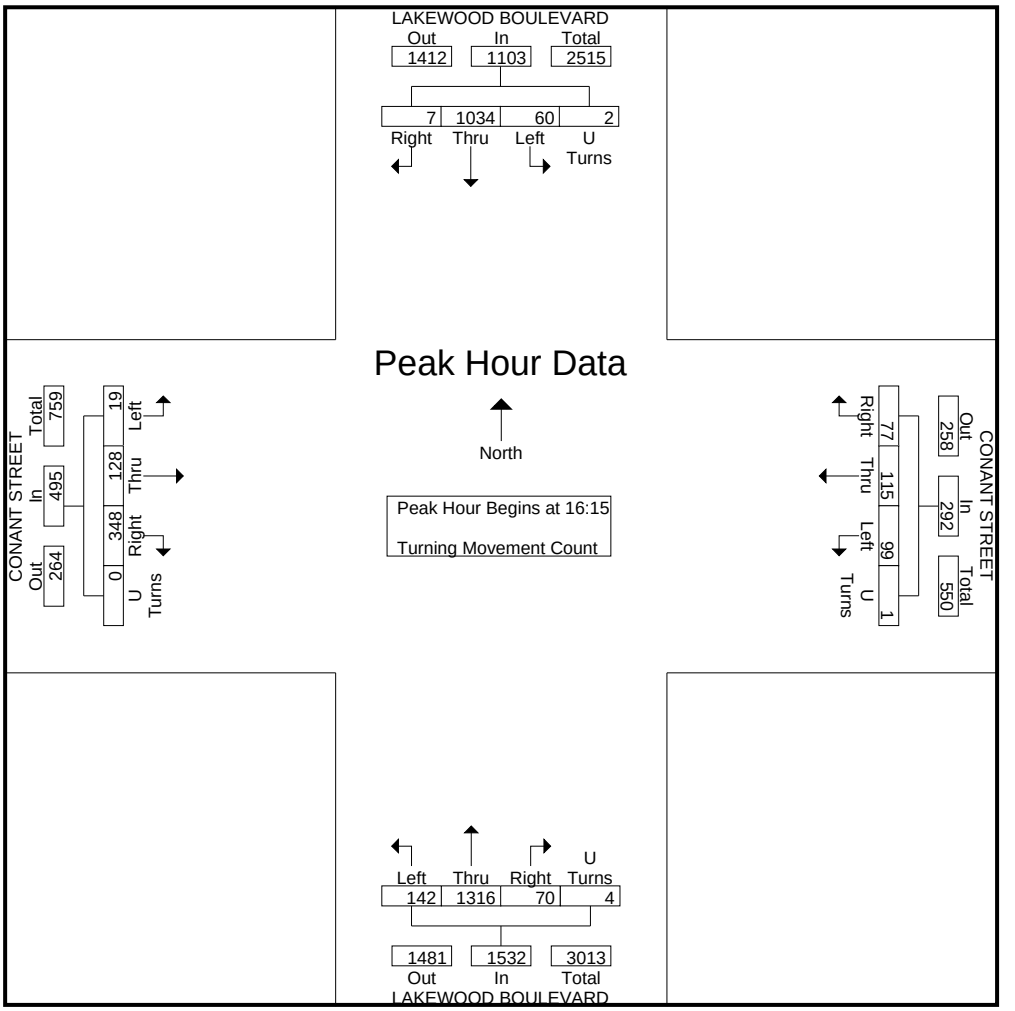


Transportation Studies, Inc
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: LONG BEACH
N-S Direction: LAKEWOOD BOULEVARD
E-W Direction: CONANT STREET

File Name : H2403011
Site Code : 00000000
Start Date : 3/6/2024
Page No : 3

	LAKEWOOD BOULEVARD Southbound					CONANT STREET Westbound					LAKEWOOD BOULEVARD Northbound					CONANT STREET Eastbound					
Start Time	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:15																					
16:15	4	263	13	2	282	23	33	20	1	77	22	307	32	0	361	67	23	2	0	92	812
16:30	2	259	10	0	271	23	35	33	0	91	21	350	37	2	410	92	29	8	0	129	901
16:45	0	246	16	0	262	13	21	26	0	60	15	315	37	1	368	84	21	1	0	106	796
17:00	1	266	21	0	288	18	26	20	0	64	12	344	36	1	393	105	55	8	0	168	913
Total Volume	7	1034	60	2	1103	77	115	99	1	292	70	1316	142	4	1532	348	128	19	0	495	3422
% App. Total	0.6	93.7	5.4	0.2		26.4	39.4	33.9	0.3		4.6	85.9	9.3	0.3		70.3	25.9	3.8	0		
PHF	.438	.972	.714	.250	.957	.837	.821	.750	.250	.802	.795	.940	.959	.500	.934	.829	.582	.594	.000	.737	.937



Transportation Studies, Inc
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: LONG BEACH
N-S Direction: FACULTY AVENUE
E-W Direction: CONANT STREET

File Name : H2403012
Site Code : 00000000
Start Date : 3/6/2024
Page No : 1

Groups Printed- Turning Movement Count

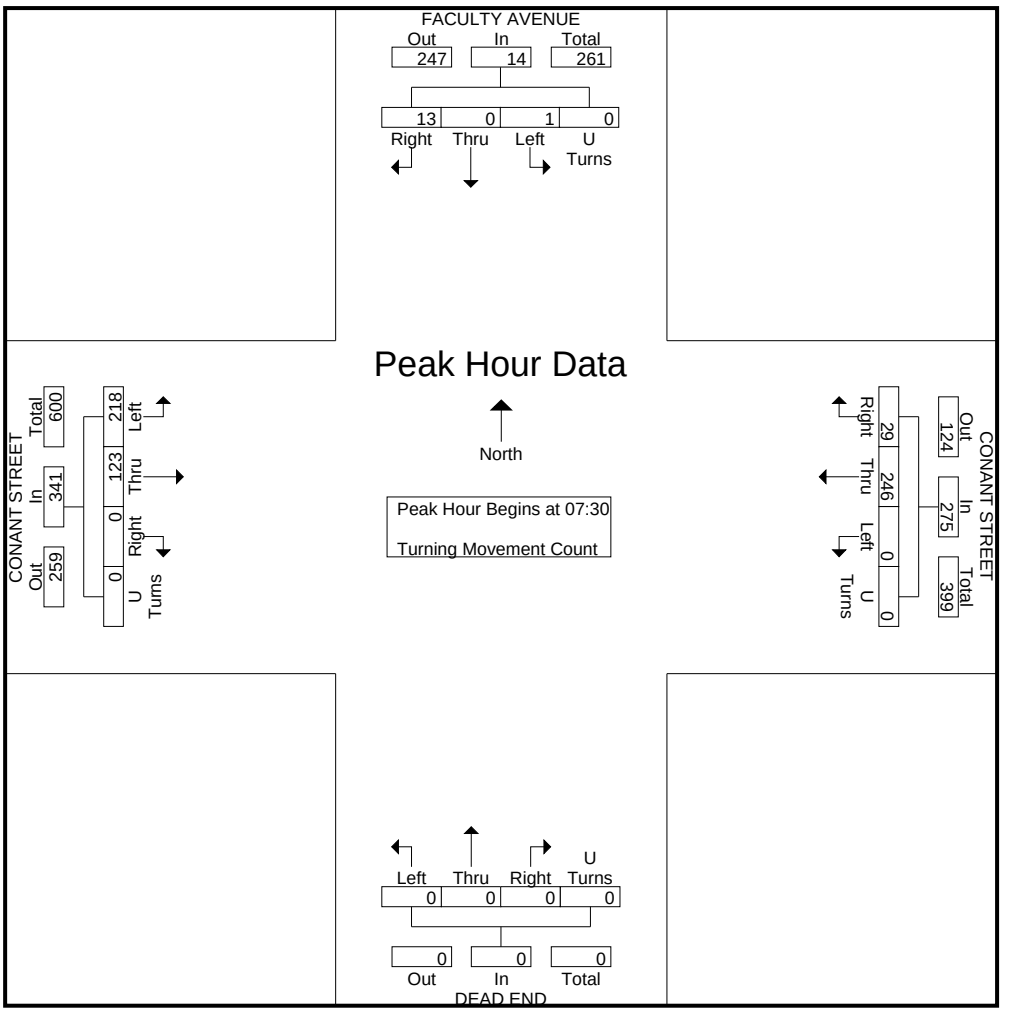
	FACULTY AVENUE Southbound				CONANT STREET Westbound				DEAD END Northbound				CONANT STREET Eastbound				
Start Time	Right	Thru	Left	U Turns	Right	Thru	Left	U Turns	Right	Thru	Left	U Turns	Right	Thru	Left	U Turns	Int. Total
07:00	2	0	0	0	3	30	0	0	0	0	0	0	0	9	10	0	54
07:15	2	0	1	0	0	45	0	0	0	0	0	0	0	30	25	1	104
07:30	1	0	1	0	4	45	0	0	0	0	0	0	0	30	32	0	113
07:45	5	0	0	0	9	78	0	0	0	0	0	0	0	33	94	0	219
Total	10	0	2	0	16	198	0	0	0	0	0	0	0	102	161	1	490
08:00	5	0	0	0	9	76	0	0	0	0	0	0	0	29	52	0	171
08:15	2	0	0	0	7	47	0	0	0	0	0	0	0	31	40	0	127
08:30	3	0	0	0	4	53	0	0	0	0	0	0	0	19	34	0	113
08:45	1	0	0	0	8	47	0	0	0	0	0	0	0	28	46	0	130
Total	11	0	0	0	28	223	0	0	0	0	0	0	0	107	172	0	541
16:00	58	0	9	0	9	51	0	0	0	0	0	0	0	45	12	0	184
16:15	32	0	3	1	6	50	0	0	0	0	0	0	0	40	19	0	151
16:30	28	0	4	0	3	43	0	0	0	0	0	0	0	55	11	0	144
16:45	24	0	4	0	1	32	0	0	0	0	0	0	0	45	9	0	115
Total	142	0	20	1	19	176	0	0	0	0	0	0	0	185	51	0	594
17:00	16	0	7	0	2	42	0	0	0	0	0	0	0	64	14	0	145
17:15	33	0	8	0	2	37	0	0	0	0	0	0	0	58	6	0	144
17:30	36	0	9	0	3	59	0	0	0	0	0	0	0	38	10	0	155
17:45	16	0	0	0	0	25	0	0	0	0	0	0	0	35	17	0	93
Total	101	0	24	0	7	163	0	0	0	0	0	0	0	195	47	0	537
Grand Total	264	0	46	1	70	760	0	0	0	0	0	0	0	589	431	1	2162
Apprch %	84.9	0	14.8	0.3	8.4	91.6	0	0	0	0	0	0	0	57.7	42.2	0.1	
Total %	12.2	0	2.1	0	3.2	35.2	0	0	0	0	0	0	0	27.2	19.9	0	

Transportation Studies, Inc
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: LONG BEACH
N-S Direction: FACULTY AVENUE
E-W Direction: CONANT STREET

File Name : H2403012
Site Code : 00000000
Start Date : 3/6/2024
Page No : 2

	FACULTY AVENUE Southbound					CONANT STREET Westbound					DEAD END Northbound					CONANT STREET Eastbound					
Start Time	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30																					
07:30	1	0	1	0	2	4	45	0	0	49	0	0	0	0	0	0	30	32	0	62	113
07:45	5	0	0	0	5	9	78	0	0	87	0	0	0	0	0	0	33	94	0	127	219
08:00	5	0	0	0	5	9	76	0	0	85	0	0	0	0	0	0	29	52	0	81	171
08:15	2	0	0	0	2	7	47	0	0	54	0	0	0	0	0	0	31	40	0	71	127
Total Volume	13	0	1	0	14	29	246	0	0	275	0	0	0	0	0	0	123	218	0	341	630
% App. Total	92.9	0	7.1	0		10.5	89.5	0	0		0	0	0	0		0	36.1	63.9	0		
PHF	.650	.000	.250	.000	.700	.806	.788	.000	.000	.790	.000	.000	.000	.000	.000	.000	.932	.580	.000	.671	.719

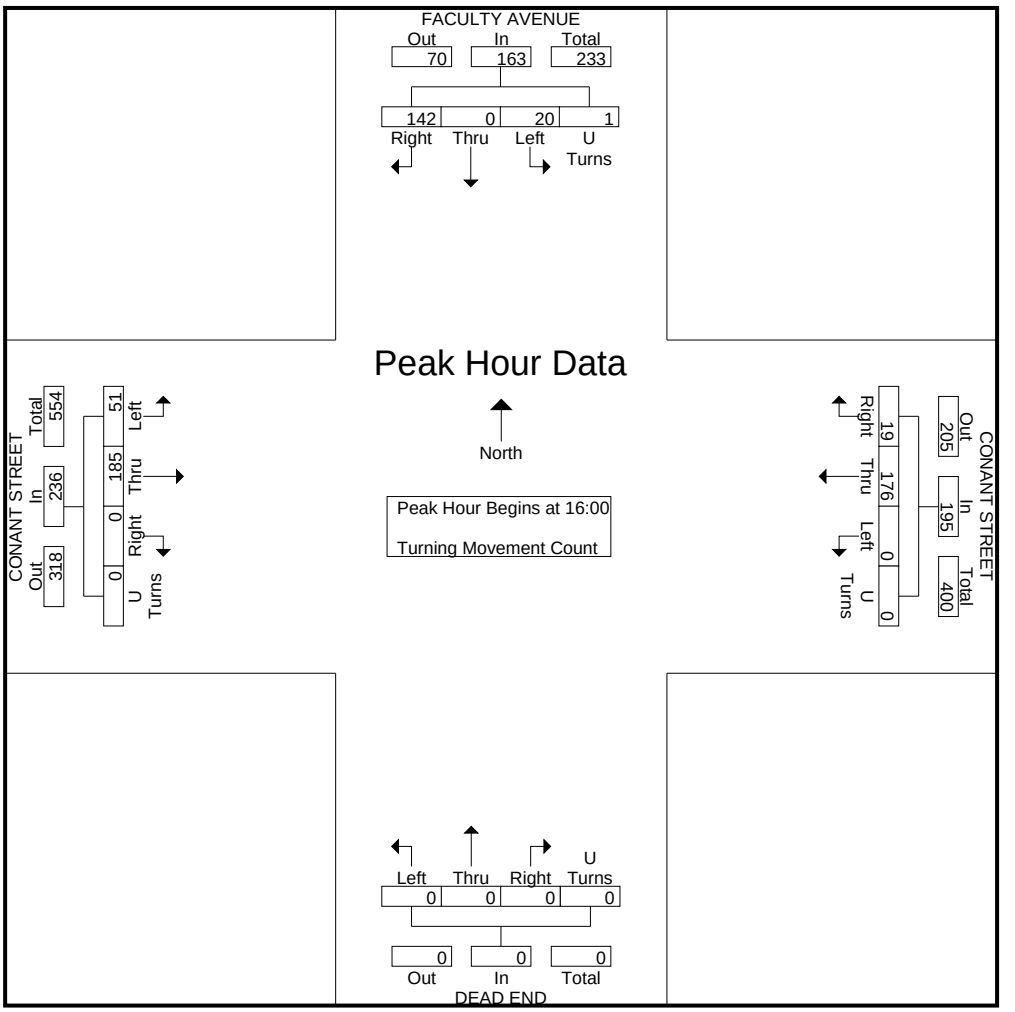


Transportation Studies, Inc
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: LONG BEACH
N-S Direction: FACULTY AVENUE
E-W Direction: CONANT STREET

File Name : H2403012
Site Code : 00000000
Start Date : 3/6/2024
Page No : 3

	FACULTY AVENUE Southbound					CONANT STREET Westbound					DEAD END Northbound					CONANT STREET Eastbound					
Start Time	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:00																					
16:00	58	0	9	0	67	9	51	0	0	60	0	0	0	0	0	0	45	12	0	57	184
16:15	32	0	3	1	36	6	50	0	0	56	0	0	0	0	0	0	40	19	0	59	151
16:30	28	0	4	0	32	3	43	0	0	46	0	0	0	0	0	0	55	11	0	66	144
16:45	24	0	4	0	28	1	32	0	0	33	0	0	0	0	0	0	45	9	0	54	115
Total Volume	142	0	20	1	163	19	176	0	0	195	0	0	0	0	0	0	185	51	0	236	594
% App. Total	87.1	0	12.3	0.6		9.7	90.3	0	0		0	0	0	0		0	78.4	21.6	0		
PHF	.612	.000	.556	.250	.608	.528	.863	.000	.000	.813	.000	.000	.000	.000	.000	.000	.841	.671	.000	.894	.807



Transportation Studies, Inc
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: LONG BEACH
N-S Direction: CLARK AVENUE
E-W Direction: CONANT STREET

File Name : H2403013
Site Code : 00000000
Start Date : 3/6/2024

Groups Printed- Turning Movement Count

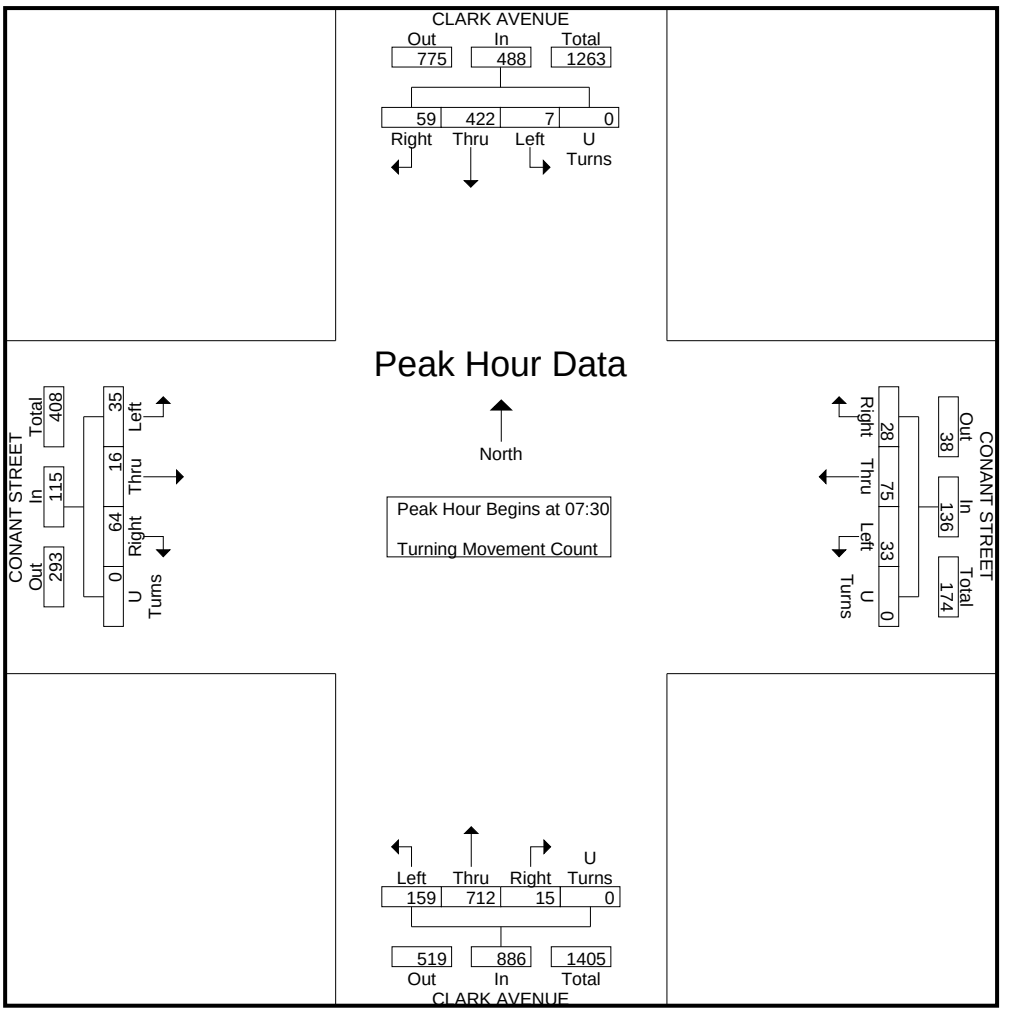
	CLARK AVENUE Southbound				CONANT STREET Westbound				CLARK AVENUE Northbound				CONANT STREET Eastbound				
Start Time	Right	Thru	Left	U Turns	Right	Thru	Left	U Turns	Right	Thru	Left	U Turns	Right	Thru	Left	U Turns	Int. Total
07:00	17	60	1	0	3	5	10	0	3	67	18	0	8	1	1	0	194
07:15	21	104	0	0	2	10	4	0	2	100	23	0	9	3	8	0	286
07:30	10	95	1	0	9	12	6	0	4	182	30	0	19	5	7	0	380
07:45	18	128	2	0	7	25	14	0	5	211	50	0	17	3	11	0	491
Total	66	387	4	0	21	52	34	0	14	560	121	0	53	12	27	0	1351
08:00	19	101	3	0	7	30	7	0	4	176	45	0	13	3	9	0	417
08:15	12	98	1	0	5	8	6	0	2	143	34	0	15	5	8	0	337
08:30	12	86	6	0	8	10	5	0	7	144	45	0	8	4	6	0	341
08:45	15	88	2	0	5	19	5	0	5	125	30	0	9	5	8	0	316
Total	58	373	12	0	25	67	23	0	18	588	154	0	45	17	31	0	1411
16:00	11	157	10	0	5	10	2	0	6	172	34	0	43	10	27	0	487
16:15	8	154	6	0	4	10	2	0	8	197	36	0	22	15	12	0	474
16:30	4	146	4	0	1	10	5	0	6	194	28	0	27	20	18	0	463
16:45	3	111	6	1	8	8	4	0	10	175	22	0	27	20	14	0	409
Total	26	568	26	1	18	38	13	0	30	738	120	0	119	65	71	0	1833
17:00	6	128	7	0	3	5	2	0	10	205	27	0	40	14	17	0	464
17:15	7	133	4	0	3	8	5	0	9	228	28	0	39	19	17	0	500
17:30	18	142	6	0	5	11	4	0	17	210	27	0	34	12	9	0	495
17:45	6	112	3	0	4	1	4	0	6	176	21	0	20	12	9	0	374
Total	37	515	20	0	15	25	15	0	42	819	103	0	133	57	52	0	1833
Grand Total	187	1843	62	1	79	182	85	0	104	2705	498	0	350	151	181	0	6428
Apprch %	8.9	88.1	3	0	22.8	52.6	24.6	0	3.1	81.8	15.1	0	51.3	22.1	26.5	0	
Total %	2.9	28.7	1	0	1.2	2.8	1.3	0	1.6	42.1	7.7	0	5.4	2.3	2.8	0	

Transportation Studies, Inc
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: LONG BEACH
N-S Direction: CLARK AVENUE
E-W Direction: CONANT STREET

File Name : H2403013
Site Code : 00000000
Start Date : 3/6/2024
Page No : 2

	CLARK AVENUE Southbound					CONANT STREET Westbound					CLARK AVENUE Northbound					CONANT STREET Eastbound					
Start Time	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30																					
07:30	10	95	1	0	106	9	12	6	0	27	4	182	30	0	216	19	5	7	0	31	380
07:45	18	128	2	0	148	7	25	14	0	46	5	211	50	0	266	17	3	11	0	31	491
08:00	19	101	3	0	123	7	30	7	0	44	4	176	45	0	225	13	3	9	0	25	417
08:15	12	98	1	0	111	5	8	6	0	19	2	143	34	0	179	15	5	8	0	28	337
Total Volume	59	422	7	0	488	28	75	33	0	136	15	712	159	0	886	64	16	35	0	115	1625
% App. Total	12.1	86.5	1.4	0		20.6	55.1	24.3	0		1.7	80.4	17.9	0		55.7	13.9	30.4	0		
PHF	.776	.824	.583	.000	.824	.778	.625	.589	.000	.739	.750	.844	.795	.000	.833	.842	.800	.795	.000	.927	.827

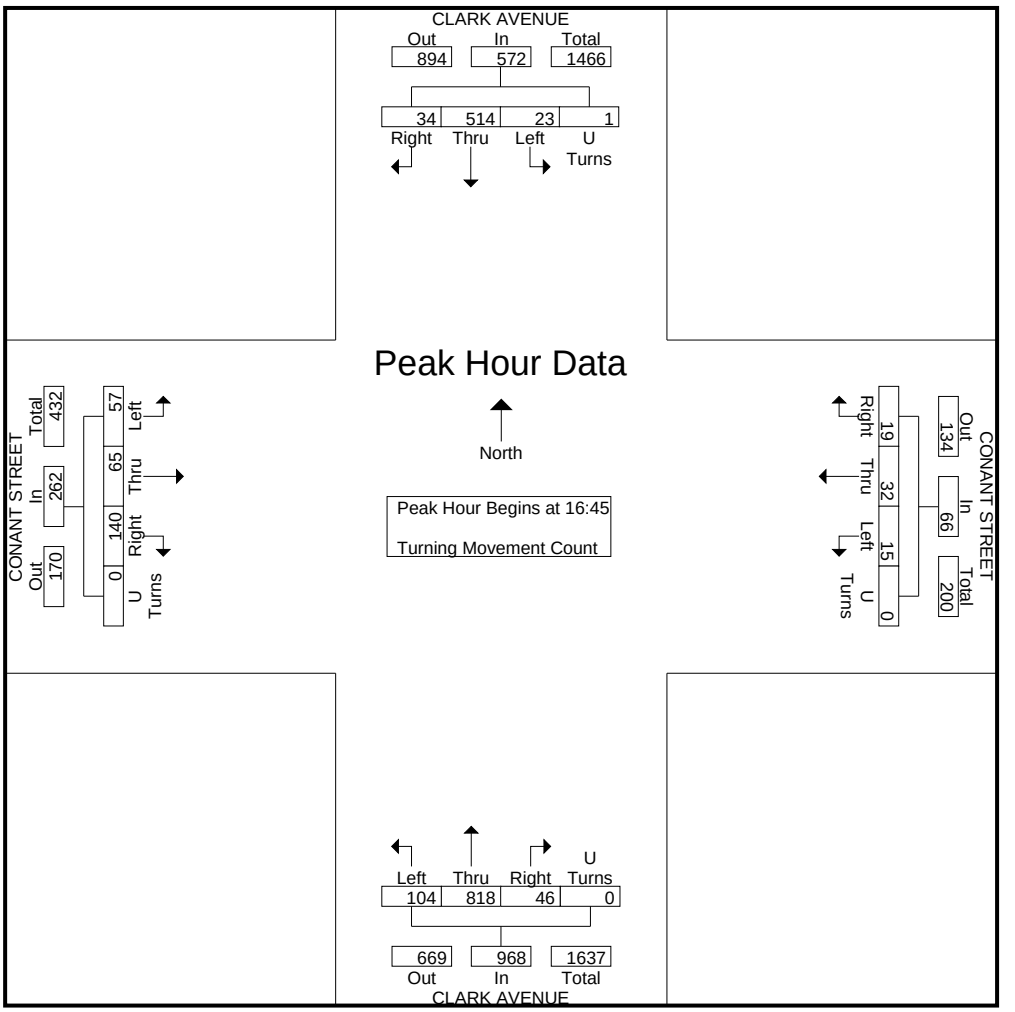


Transportation Studies, Inc
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: LONG BEACH
N-S Direction: CLARK AVENUE
E-W Direction: CONANT STREET

File Name : H2403013
Site Code : 00000000
Start Date : 3/6/2024
Page No : 3

	CLARK AVENUE Southbound					CONANT STREET Westbound					CLARK AVENUE Northbound					CONANT STREET Eastbound					
Start Time	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:45																					
16:45	3	111	6	1	121	8	8	4	0	20	10	175	22	0	207	27	20	14	0	61	409
17:00	6	128	7	0	141	3	5	2	0	10	10	205	27	0	242	40	14	17	0	71	464
17:15	7	133	4	0	144	3	8	5	0	16	9	228	28	0	265	39	19	17	0	75	500
17:30	18	142	6	0	166	5	11	4	0	20	17	210	27	0	254	34	12	9	0	55	495
Total Volume	34	514	23	1	572	19	32	15	0	66	46	818	104	0	968	140	65	57	0	262	1868
% App. Total	5.9	89.9	4	0.2		28.8	48.5	22.7	0		4.8	84.5	10.7	0		53.4	24.8	21.8	0		
PHF	.472	.905	.821	.250	.861	.594	.727	.750	.000	.825	.676	.897	.929	.000	.913	.875	.813	.838	.000	.873	.934



Transportation Studies, Inc
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: LONG BEACH
N-S Direction: LAKEWOOD BOULEVARD
E-W Direction: WARDLOW BOULEVARD

File Name : H2403014
Site Code : 00000000
Start Date : 3/6/2024
Page No : 1

Groups Printed- Turning Movement Count

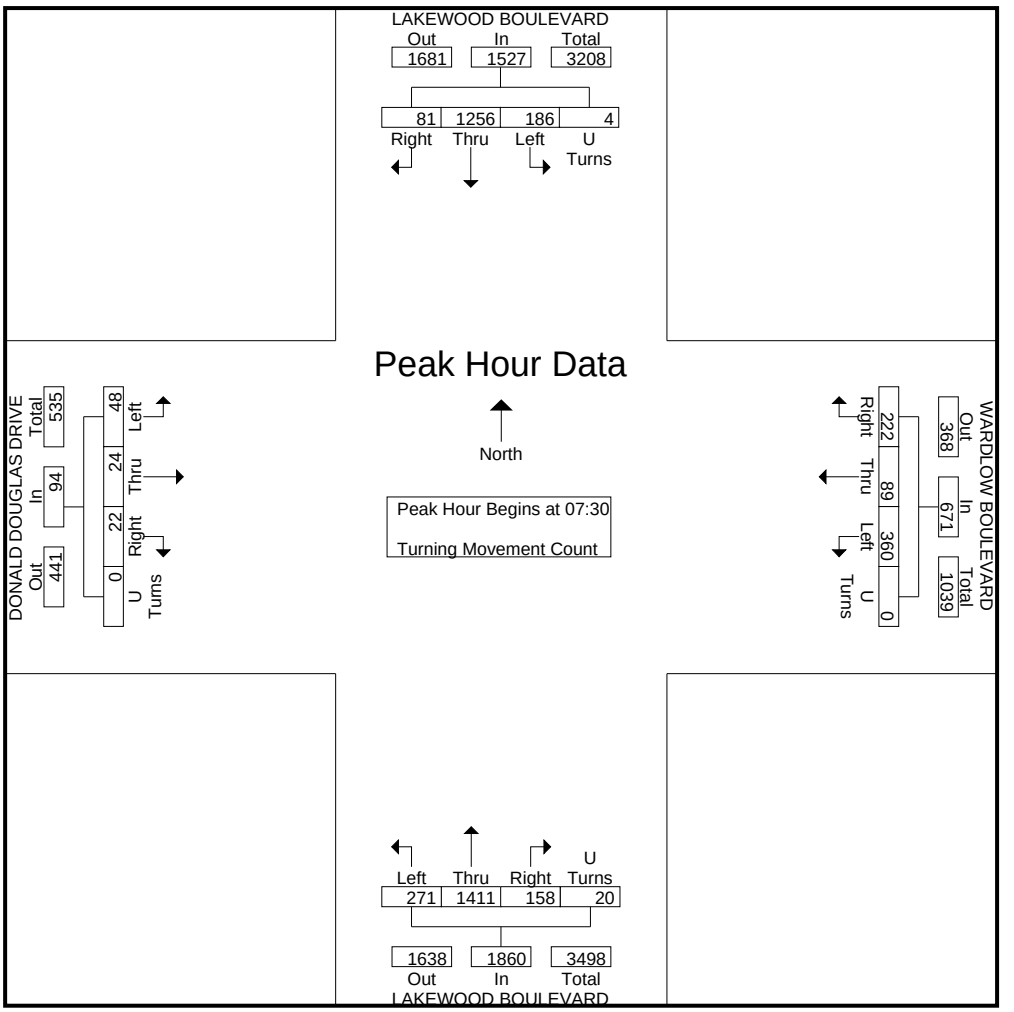
	LAKEWOOD BOULEVARD Southbound				WARDLOW BOULEVARD Westbound				LAKEWOOD BOULEVARD Northbound				DONALD DOUGLAS DRIVE Eastbound				
Start Time	Right	Thru	Left	U Turns	Right	Thru	Left	U Turns	Right	Thru	Left	U Turns	Right	Thru	Left	U Turns	Int. Total
07:00	28	182	17	0	29	24	61	0	16	216	69	3	4	8	11	0	668
07:15	16	217	24	2	46	32	73	0	30	282	71	7	8	8	11	0	827
07:30	29	322	43	0	44	21	97	0	40	321	76	0	4	5	15	0	1017
07:45	15	306	54	2	41	24	86	0	57	424	75	6	10	9	10	0	1119
Total	88	1027	138	4	160	101	317	0	143	1243	291	16	26	30	47	0	3631
08:00	19	337	42	2	84	26	102	0	28	331	56	10	4	3	11	0	1055
08:15	18	291	47	0	53	18	75	0	33	335	64	4	4	7	12	0	961
08:30	24	275	26	1	52	28	59	0	39	318	53	5	4	8	13	0	905
08:45	20	212	15	3	48	20	69	0	28	373	61	5	5	12	15	0	886
Total	81	1115	130	6	237	92	305	0	128	1357	234	24	17	30	51	0	3807
16:00	20	276	45	3	29	17	40	1	39	361	34	4	6	11	19	0	905
16:15	9	300	39	2	28	20	37	3	63	335	33	6	3	12	14	0	904
16:30	18	308	56	2	37	20	34	0	54	352	28	4	15	19	16	1	964
16:45	15	283	40	2	32	17	35	0	73	348	53	5	7	25	21	0	956
Total	62	1167	180	9	126	74	146	4	229	1396	148	19	31	67	70	1	3729
17:00	18	325	45	3	37	18	39	0	62	330	28	6	8	6	13	0	938
17:15	7	266	62	0	24	14	36	0	83	349	36	4	6	8	13	0	908
17:30	18	267	41	0	31	26	42	0	91	311	48	12	3	19	17	0	926
17:45	8	237	28	2	37	17	43	0	70	332	40	5	11	11	18	1	860
Total	51	1095	176	5	129	75	160	0	306	1322	152	27	28	44	61	1	3632
Grand Total	282	4404	624	24	652	342	928	4	806	5318	825	86	102	171	229	2	14799
Apprch %	5.3	82.6	11.7	0.4	33.9	17.8	48.2	0.2	11.5	75.6	11.7	1.2	20.2	33.9	45.4	0.4	
Total %	1.9	29.8	4.2	0.2	4.4	2.3	6.3	0	5.4	35.9	5.6	0.6	0.7	1.2	1.5	0	

Transportation Studies, Inc
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: LONG BEACH
N-S Direction: LAKEWOOD BOULEVARD
E-W Direction: WARDLOW BOULEVARD

File Name : H2403014
Site Code : 00000000
Start Date : 3/6/2024
Page No : 2

	LAKEWOOD BOULEVARD Southbound					WARDLOW BOULEVARD Westbound					LAKEWOOD BOULEVARD Northbound					DONALD DOUGLAS DRIVE Eastbound					
Start Time	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30																					
07:30	29	322	43	0	394	44	21	97	0	162	40	321	76	0	437	4	5	15	0	24	1017
07:45	15	306	54	2	377	41	24	86	0	151	57	424	75	6	562	10	9	10	0	29	1119
08:00	19	337	42	2	400	84	26	102	0	212	28	331	56	10	425	4	3	11	0	18	1055
08:15	18	291	47	0	356	53	18	75	0	146	33	335	64	4	436	4	7	12	0	23	961
Total Volume	81	1256	186	4	1527	222	89	360	0	671	158	1411	271	20	1860	22	24	48	0	94	4152
% App. Total	5.3	82.3	12.2	0.3		33.1	13.3	53.7	0		8.5	75.9	14.6	1.1		23.4	25.5	51.1	0		
PHF	.698	.932	.861	.500	.954	.661	.856	.882	.000	.791	.693	.832	.891	.500	.827	.550	.667	.800	.000	.810	.928

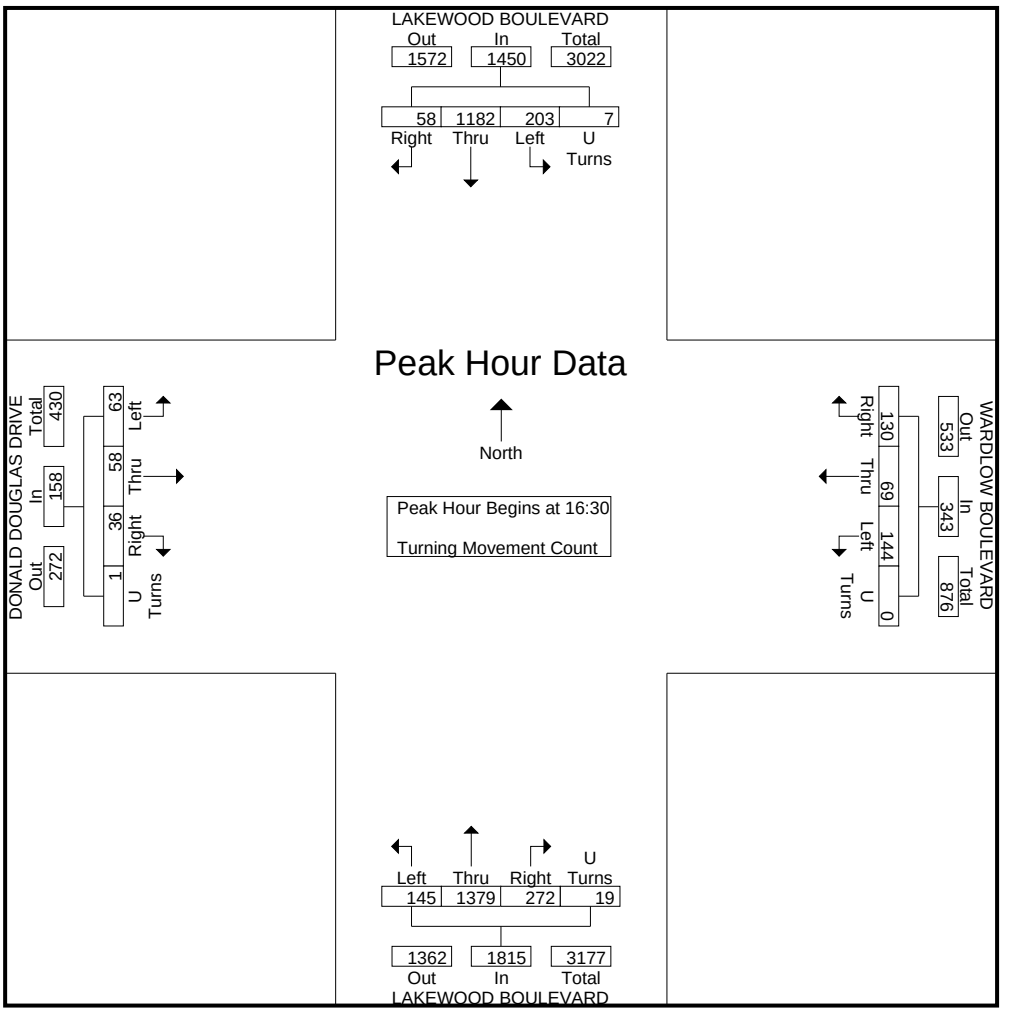


Transportation Studies, Inc
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: LONG BEACH
N-S Direction: LAKEWOOD BOULEVARD
E-W Direction: WARDLOW BOULEVARD

File Name : H2403014
Site Code : 00000000
Start Date : 3/6/2024
Page No : 3

	LAKEWOOD BOULEVARD Southbound					WARDLOW BOULEVARD Westbound					LAKEWOOD BOULEVARD Northbound					DONALD DOUGLAS DRIVE Eastbound					
Start Time	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:30																					
16:30	18	308	56	2	384	37	20	34	0	91	54	352	28	4	438	15	19	16	1	51	964
16:45	15	283	40	2	340	32	17	35	0	84	73	348	53	5	479	7	25	21	0	53	956
17:00	18	325	45	3	391	37	18	39	0	94	62	330	28	6	426	8	6	13	0	27	938
17:15	7	266	62	0	335	24	14	36	0	74	83	349	36	4	472	6	8	13	0	27	908
Total Volume	58	1182	203	7	1450	130	69	144	0	343	272	1379	145	19	1815	36	58	63	1	158	3766
% App. Total	4	81.5	14	0.5		37.9	20.1	42	0		15	76	8	1		22.8	36.7	39.9	0.6		
PHF	.806	.909	.819	.583	.927	.878	.863	.923	.000	.912	.819	.979	.684	.792	.947	.600	.580	.750	.250	.745	.977



Transportation Studies, Inc
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: LONG BEACH
N-S Direction: CLARK AVENUE
E-W Direction: WARDLOW BOULEVARD

File Name : H2403015
Site Code : 00000000
Start Date : 3/6/2024
Page No : 1

Groups Printed- Turning Movement Count

	CLARK AVENUE Southbound				WARDLOW BOULEVARD Westbound				CLARK AVENUE Northbound				WARDLOW BOULEVARD Eastbound				
Start Time	Right	Thru	Left	U Turns	Right	Thru	Left	U Turns	Right	Thru	Left	U Turns	Right	Thru	Left	U Turns	Int. Total
07:00	29	61	6	0	11	88	3	0	4	66	4	1	1	26	8	0	308
07:15	27	99	6	0	20	127	8	0	11	89	8	1	3	42	16	0	457
07:30	20	87	22	0	29	130	18	0	24	169	11	1	9	68	17	0	605
07:45	23	114	27	0	46	146	27	0	32	183	11	1	8	90	21	0	729
Total	99	361	61	0	106	491	56	0	71	507	34	4	21	226	62	0	2099
08:00	23	88	15	0	27	171	24	0	13	182	11	0	12	42	12	0	620
08:15	17	108	1	0	25	102	18	0	7	136	15	0	11	59	12	0	511
08:30	17	87	6	1	34	115	20	0	14	140	10	1	5	49	19	0	518
08:45	16	78	8	0	25	122	14	0	9	126	9	0	4	37	8	0	456
Total	73	361	30	1	111	510	76	0	43	584	45	1	32	187	51	0	2105
16:00	17	167	20	0	19	48	5	0	21	180	20	0	9	98	19	0	623
16:15	18	138	22	0	27	52	5	0	22	195	10	1	11	90	24	0	615
16:30	18	143	21	0	21	63	6	0	14	186	10	0	8	107	21	0	618
16:45	9	96	25	0	19	69	8	0	28	154	6	0	10	92	31	1	548
Total	62	544	88	0	86	232	24	0	85	715	46	1	38	387	95	1	2404
17:00	14	119	31	0	10	64	11	1	26	212	11	1	10	86	26	0	622
17:15	14	136	22	1	21	45	5	1	21	229	9	0	10	113	22	0	649
17:30	16	155	15	0	13	73	8	0	27	200	8	0	6	124	31	0	676
17:45	11	103	19	0	18	83	7	1	9	161	8	0	6	97	24	0	547
Total	55	513	87	1	62	265	31	3	83	802	36	1	32	420	103	0	2494
Grand Total	289	1779	266	2	365	1498	187	3	282	2608	161	7	123	1220	311	1	9102
Apprch %	12.4	76.2	11.4	0.1	17.8	73	9.1	0.1	9.2	85.3	5.3	0.2	7.4	73.7	18.8	0.1	
Total %	3.2	19.5	2.9	0	4	16.5	2.1	0	3.1	28.7	1.8	0.1	1.4	13.4	3.4	0	

Transportation Studies, Inc
2640 Walnut Avenue, Suite L
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City: LONG BEACH
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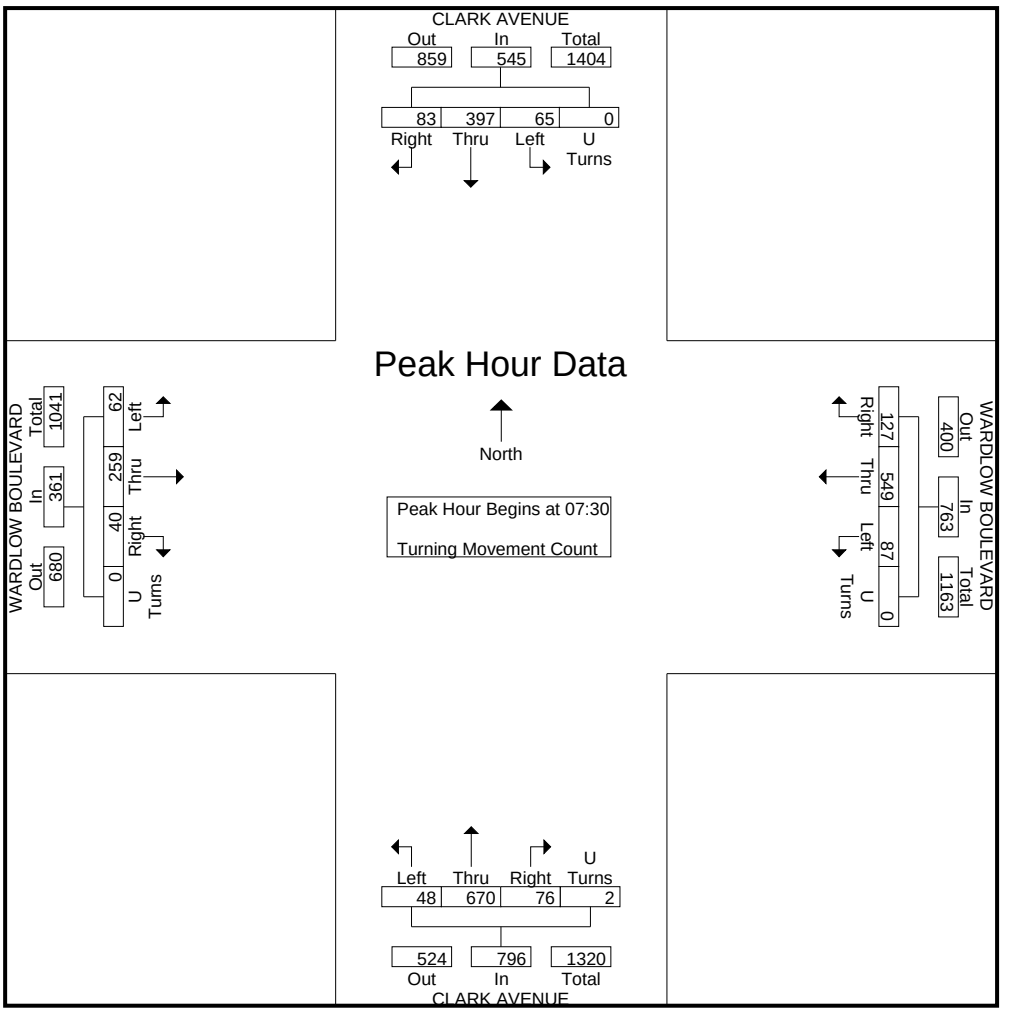
File Name : H2403015
Site Code : 00000000
Start Date : 3/6/2024

	CLARK AVENUE Southbound					WARDLOW BOULEVARD Westbound					CLARK AVENUE Northbound					WARDLOW BOULEVARD Eastbound					
Start Time	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30																					
07:30	20	87	22	0	129	29	130	18	0	177	24	169	11	1	205	9	68	17	0	94	605
07:45	23	114	27	0	164	46	146	27	0	219	32	183	11	1	227	8	90	21	0	119	729
08:00	23	88	15	0	126	27	171	24	0	222	13	182	11	0	206	12	42	12	0	66	620
08:15	17	108	1	0	126	25	102	18	0	145	7	136	15	0	158	11	59	12	0	82	511
Total Volume	83	397	65	0	545	127	549	87	0	763	76	670	48	2	796	40	259	62	0	361	2465
% App. Total	15.2	72.8	11.9	0		16.6	72	11.4	0		9.5	84.2	6	0.3		11.1	71.7	17.2	0		
PHF	.902	.871	.602	.000	.831	.690	.803	.806	.000	.859	.594	.915	.800	.500	.877	.833	.719	.738	.000	.758	.845

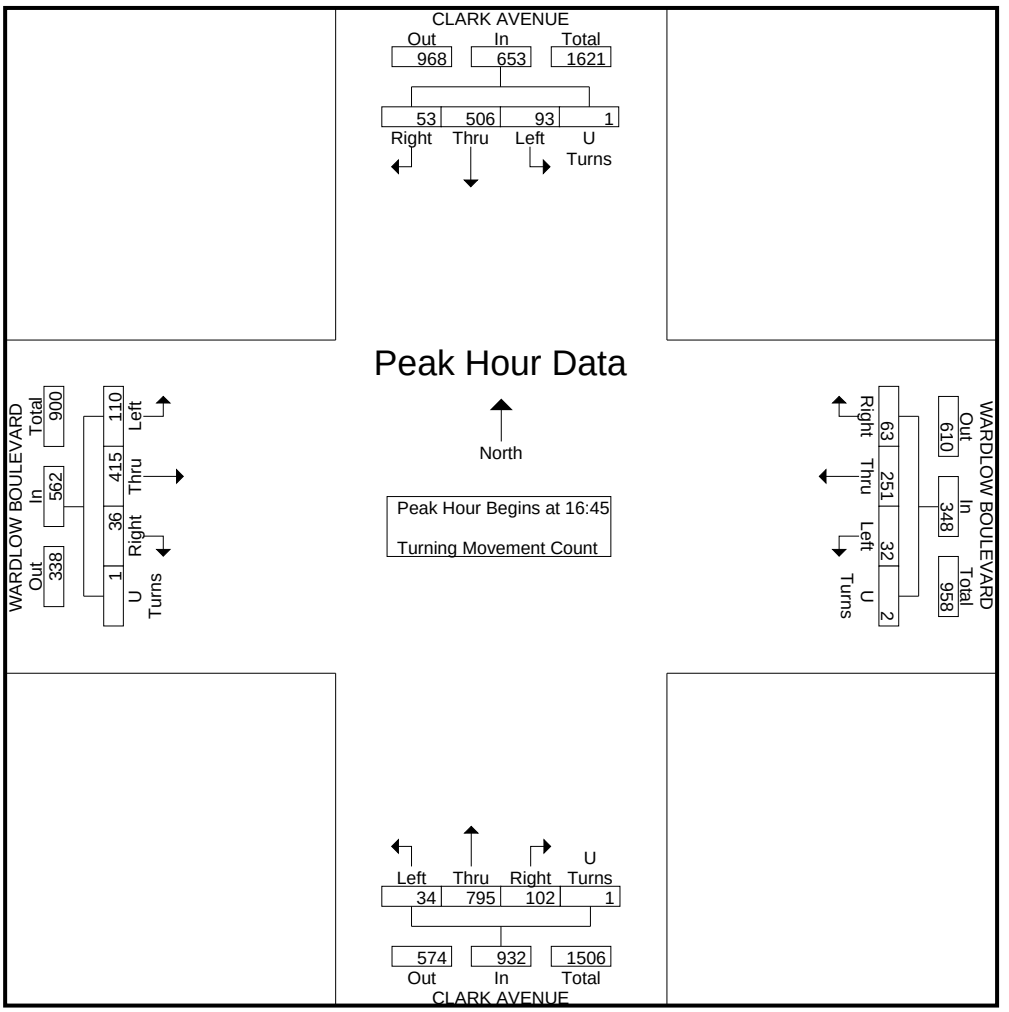


Transportation Studies, Inc
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: LONG BEACH
N-S Direction: CLARK AVENUE
E-W Direction: WARDLOW BOULEVARD

File Name : H2403015
Site Code : 00000000
Start Date : 3/6/2024
Page No : 3

	CLARK AVENUE Southbound					WARDLOW BOULEVARD Westbound					CLARK AVENUE Northbound					WARDLOW BOULEVARD Eastbound					
Start Time	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Right	Thru	Left	U Turns	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:45																					
16:45	9	96	25	0	130	19	69	8	0	96	28	154	6	0	188	10	92	31	1	134	548
17:00	14	119	31	0	164	10	64	11	1	86	26	212	11	1	250	10	86	26	0	122	622
17:15	14	136	22	1	173	21	45	5	1	72	21	229	9	0	259	10	113	22	0	145	649
17:30	16	155	15	0	186	13	73	8	0	94	27	200	8	0	235	6	124	31	0	161	676
Total Volume	53	506	93	1	653	63	251	32	2	348	102	795	34	1	932	36	415	110	1	562	2495
% App. Total	8.1	77.5	14.2	0.2		18.1	72.1	9.2	0.6		10.9	85.3	3.6	0.1		6.4	73.8	19.6	0.2		
PHF	.828	.816	.750	.250	.878	.750	.860	.727	.500	.906	.911	.868	.773	.250	.900	.900	.837	.887	.250	.873	.923



APPENDIX B

INTERSECTION LEVEL OF SERVICE CALCULATION WORKSHEETS

APPENDIX B-I

EXISTING TRAFFIC CONDITIONS

Intersection Level Of Service Report
Intersection 1: Lakewood Boulevard at Carson Street

Control Type:	Signalized	Delay (sec / veh):	34.8
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.611

Intersection Setup

Name	Lakewood Boulevard			Lakewood Boulevard			Carson Street			Carson 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	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	Lakewood Boulevard			Lakewood Boulevard			Carson Street			Carson Street		
Base Volume Input [veh/h]	171	493	168	146	1238	172	86	851	212	285	724	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
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	493	168	146	1238	172	86	851	212	285	724	26
Peak Hour Factor	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560
Other Adjustment Factor	1.0000	1.0000	1.0000	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	129	44	38	324	45	22	223	55	75	189	7
Total Analysis Volume [veh/h]	179	516	176	153	1295	180	90	890	222	298	757	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]	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	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	1	6	6	5	2	0	3	8	8	7	4	0
Auxiliary Signal Groups			6,7						1,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	10	10	6	10	0	6	10	10	6	10	0
Maximum Green [s]	30	30	30	30	30	0	30	30	30	30	30	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	12	39	39	18	45	0	11	46	46	17	52	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	28	28	0	31	0	0	35	35	0	28	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	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No	No	No	No	
Maximum Recall	No	No	No	No	No		No	No	No	No	No	
Pedestrian Recall	No	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	R	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	0.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	54	70	12	58	58	6	26	38	12	32	32
g / C, Green / Cycle	0.07	0.45	0.59	0.10	0.48	0.48	0.05	0.21	0.31	0.10	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.05	0.10	0.11	0.09	0.22	0.22	0.03	0.17	0.14	0.09	0.15	0.15
s, saturation flow rate [veh/h]	3459	5094	1589	1781	5094	1723	3459	5094	1589	3459	3560	1837
c, Capacity [veh/h]	233	2289	931	181	2463	833	167	1084	498	356	953	492
d1, Uniform Delay [s]	55.07	20.25	11.58	53.02	20.43	20.44	55.82	45.08	32.89	52.85	37.68	37.68
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.13	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	1.00	1.00
d2, Incremental Delay [s]	5.28	0.23	0.45	10.31	0.59	1.74	2.68	1.61	0.73	5.20	0.48	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	0.77	0.23	0.19	0.85	0.45	0.45	0.54	0.82	0.45	0.84	0.54	0.54
d, Delay for Lane Group [s/veh]	60.34	20.48	12.03	63.33	21.02	22.18	58.51	46.69	33.62	58.05	38.16	38.62
Lane Group LOS	E	C	B	E	C	C	E	D	C	E	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.83	3.01	2.28	5.05	6.84	7.23	1.40	8.56	5.27	4.66	6.58	6.86
50th-Percentile Queue Length [ft/ln]	70.86	75.16	56.93	126.27	171.01	180.70	34.89	214.04	131.70	116.61	164.39	171.43
95th-Percentile Queue Length [veh/ln]	5.10	5.41	4.10	8.74	11.13	11.64	2.51	13.36	9.03	8.21	10.78	11.15
95th-Percentile Queue Length [ft/ln]	127.55	135.29	102.47	218.41	278.24	290.93	62.81	334.00	225.80	205.16	269.53	278.80

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	60.34	20.48	12.03	63.33	21.19	22.18	58.51	46.69	33.62	58.05	38.31	38.62
Movement LOS	E	C	B	E	C	C	E	D	C	E	D	D
d_A, Approach Delay [s/veh]	26.97			25.26			45.16			43.75		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	34.76											
Intersection LOS	C											
Intersection V/C	0.611											

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	3.242	3.015	3.114	3.020
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	700	800
d_b, Bicycle Delay [s]	30.12	26.02	25.36	21.61
l_b,int, Bicycle LOS Score for Intersection	2.039	2.231	2.221	2.155
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: Faculty Avenue at Carson Street

Control Type:	Two-way stop	Delay (sec / veh):	38.5
Analysis Method:	HCM 7th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.198

Intersection Setup

Name	Faculty Avenue		Carson Street		Carson Street	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		40.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Faculty Avenue		Carson Street		Carson Street	
Base Volume Input [veh/h]	30	120	103	965	953	72
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	120	103	965	953	72
Peak Hour Factor	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	33	28	264	261	20
Total Analysis Volume [veh/h]	33	131	113	1056	1043	79
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.20	0.32	0.18	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	38.52	25.84	12.12	0.00	0.00	0.00
Movement LOS	E	D	B	A	A	A
95th-Percentile Queue Length [veh/ln]	2.85	2.85	0.66	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	71.31	71.31	16.60	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	28.39		1.17		0.00	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	2.45					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 3: Clark Avenue at Carson Street

Control Type:	Signalized	Delay (sec / veh):	28.4
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.722

Intersection Setup

Name	Clark Avenue			Clark Avenue			Carson Street			Carson 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	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	Clark Avenue			Clark Avenue			Carson Street			Carson Street		
Base Volume Input [veh/h]	69	325	96	1	32	4	63	679	299	380	840	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	69	325	96	1	32	4	63	679	299	380	840	102
Peak Hour Factor	0.7340	0.7340	0.7340	0.7340	0.7340	0.7340	0.7340	0.7340	0.7340	0.7340	0.7340	0.7340
Other Adjustment Factor	1.0000	1.0000	1.0000	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	111	33	0	11	1	21	231	102	129	286	35
Total Analysis Volume [veh/h]	94	443	131	1	44	5	86	925	407	518	1144	139
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	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	3	8	8	7	4	0	5	2	2	1	6	0
Auxiliary Signal Groups			1,8						2,3			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	10	10	6	10	0	6	10	10	6	10	0
Maximum Green [s]	30	30	30	30	30	0	30	30	30	30	30	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	13	42	42	10	39	0	11	35	35	23	47	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	28	28	0	28	0	0	24	24	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]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No	No	No	No	
Maximum Recall	No	No	No	No	No		No	No	No	No	No	
Pedestrian Recall	No	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	R	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	0.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	29	51	0	20	20	7	47	60	18	58	58
g / C, Green / Cycle	0.08	0.26	0.46	0.00	0.18	0.18	0.06	0.43	0.54	0.17	0.53	0.53
(v / s)_i Volume / Saturation Flow Rate	0.03	0.24	0.05	0.00	0.01	0.01	0.05	0.18	0.26	0.15	0.24	0.24
s, saturation flow rate [veh/h]	3459	1870	2813	3459	1870	1805	1781	5094	1589	3459	3560	1768
c, Capacity [veh/h]	285	486	1305	9	337	325	110	2162	863	580	1887	937
d1, Uniform Delay [s]	47.64	39.50	16.59	54.77	37.49	37.50	50.90	22.29	15.44	44.87	16.01	16.03
k, delay calibration	0.11	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
d2, Incremental Delay [s]	0.67	9.99	0.03	4.90	0.09	0.10	11.21	0.62	1.84	5.10	0.79	1.59
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	0.91	0.10	0.11	0.07	0.08	0.78	0.43	0.47	0.89	0.45	0.46
d, Delay for Lane Group [s/veh]	48.31	49.49	16.63	59.67	37.58	37.60	62.11	22.91	17.29	49.97	16.80	17.62
Lane Group LOS	D	D	B	E	D	D	E	C	B	D	B	B
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.24	12.81	0.93	0.02	0.56	0.56	2.68	5.66	6.50	7.29	6.66	6.85
50th-Percentile Queue Length [ft/ln]	31.07	320.23	23.36	0.50	14.01	13.97	66.88	141.44	162.39	182.16	166.60	171.35
95th-Percentile Queue Length [veh/ln]	2.24	18.68	1.68	0.04	1.01	1.01	4.82	9.56	10.68	11.71	10.90	11.15
95th-Percentile Queue Length [ft/ln]	55.92	466.97	42.05	0.91	25.21	25.15	120.39	238.96	266.88	292.83	272.45	278.69

Movement, Approach, & Intersection Results

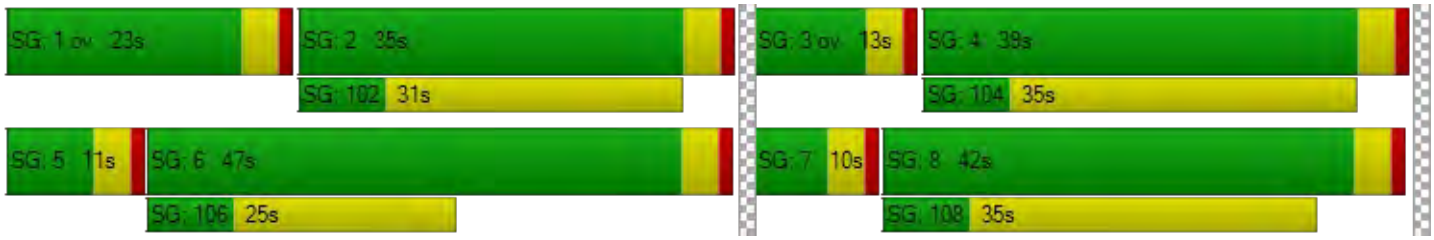
d_M, Delay for Movement [s/veh]	48.31	49.49	16.63	59.67	37.59	37.60	62.11	22.91	17.29	49.97	17.01	17.62
Movement LOS	D	D	B	E	D	D	E	C	B	D	B	B
d_A, Approach Delay [s/veh]	42.88			38.03			23.67			26.53		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	28.42											
Intersection LOS	C											
Intersection V/C	0.722											

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	2.831	2.449	3.059	3.083
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	563	781
d_b, Bicycle Delay [s]	23.59	25.59	28.39	20.43
l_b,int, Bicycle LOS Score for Intersection	2.662	1.601	2.340	2.550
Bicycle LOS	B	A	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 4: Bellflower Boulevard at Carson Street

Control Type:	Signalized	Delay (sec / veh):	37.1
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.701

Intersection Setup

Name	Bellflower Boulevard			Bellflower Boulevard			Carson Street			Carson 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	Bellflower Boulevard			Bellflower Boulevard			Carson Street			Carson Street		
Base Volume Input [veh/h]	104	574	127	211	864	60	127	629	97	160	972	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	104	574	127	211	864	60	127	629	97	160	972	116
Peak Hour Factor	0.9820	0.9820	0.9820	0.9820	0.9820	0.9820	0.9820	0.9820	0.9820	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]	26	146	32	54	220	15	32	160	25	41	247	30
Total Analysis Volume [veh/h]	106	585	129	215	880	61	129	641	99	163	990	118
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	10	0	6	10	0	6	10	0	6	10	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	35	0	20	44	0	14	35	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	24	0	0	24	0	0	24	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]	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	C	L	C	C
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]	7	22	22	15	30	30	9	41	41	11	43	43
g / C, Green / Cycle	0.07	0.21	0.21	0.14	0.28	0.28	0.09	0.39	0.39	0.11	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.06	0.16	0.08	0.12	0.25	0.25	0.07	0.14	0.14	0.09	0.21	0.21
s, saturation flow rate [veh/h]	1781	3560	1589	1781	1870	1828	1781	3560	1746	1781	3560	1770
c, Capacity [veh/h]	120	757	338	247	531	519	159	1392	683	188	1450	721
d1, Uniform Delay [s]	48.60	38.98	35.45	44.35	36.14	36.15	47.01	22.64	22.68	46.31	23.31	23.32
k, delay calibration	0.11	0.11	0.11	0.11	0.22	0.22	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]	18.11	1.71	0.71	9.14	10.37	10.64	9.54	0.71	1.47	11.49	1.29	2.58
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	0.88	0.77	0.38	0.87	0.90	0.90	0.81	0.36	0.36	0.87	0.51	0.51
d, Delay for Lane Group [s/veh]	66.72	40.69	36.16	53.49	46.51	46.79	56.55	23.35	24.15	57.80	24.60	25.90
Lane Group LOS	E	D	D	D	D	D	E	C	C	E	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.35	7.21	2.89	6.07	13.03	12.78	3.72	4.41	4.52	4.77	6.98	7.20
50th-Percentile Queue Length [ft/ln]	83.70	180.37	72.20	151.77	325.63	319.56	92.96	110.20	113.00	119.18	174.43	180.07
95th-Percentile Queue Length [veh/ln]	6.03	11.62	5.20	10.11	18.94	18.65	6.69	7.85	8.01	8.35	11.31	11.60
95th-Percentile Queue Length [ft/ln]	150.66	290.50	129.97	252.80	473.59	466.15	167.32	196.27	200.16	208.71	282.73	290.10

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	66.72	40.69	36.16	53.49	46.64	46.79	56.55	23.53	24.15	57.80	24.93	25.90
Movement LOS	E	D	D	D	D	D	E	C	C	E	C	C
d_A, Approach Delay [s/veh]	43.34			47.92			28.50			29.23		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	37.14											
Intersection LOS	D											
Intersection V/C	0.701											

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	2.779	2.695	2.883	2.915
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]	590	761	590	609
d_b, Bicycle Delay [s]	26.10	20.14	26.10	25.40
l_b,int, Bicycle LOS Score for Intersection	2.236	2.513	2.038	2.259
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 5: Clark Avenue at Lew Davis Street

Control Type:	Signalized	Delay (sec / veh):	2.6
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.292

Intersection Setup

Name	Clark Avenue		Clark Avenue		Lew Davis Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	Clark Avenue		Clark Avenue		Lew Davis Street	
Base Volume Input [veh/h]	114	699	489	111	27	9
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	114	699	489	111	27	9
Peak Hour Factor	0.7950	0.7950	0.7950	0.7950	0.7950	0.7950
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	220	154	35	8	3
Total Analysis Volume [veh/h]	143	879	615	140	34	11
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	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	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	0	6	2	0	3	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	0	10	10	0	6	0
Maximum Green [s]	0	30	30	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	1.0	0.0
Split [s]	0	58	58	0	32	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	7	7	0	7	0
Pedestrian Clearance [s]	0	14	14	0	21	0
Delayed Vehicle Green [s]	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	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	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
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	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	C	L	R
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]	2.00	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]	78	78	78	78	4	4
g / C, Green / Cycle	0.87	0.87	0.87	0.87	0.05	0.05
(v / s)_i Volume / Saturation Flow Rate	0.20	0.25	0.20	0.22	0.02	0.01
s, saturation flow rate [veh/h]	709	3560	1870	1755	1781	1589
c, Capacity [veh/h]	644	3080	1618	1518	82	73
d1, Uniform Delay [s]	2.34	1.09	1.03	1.04	41.71	41.20
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.79	0.23	0.34	0.39	3.32	0.94
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	0.22	0.29	0.23	0.25	0.41	0.15
d, Delay for Lane Group [s/veh]	3.13	1.32	1.37	1.44	45.03	42.14
Lane Group LOS	A	A	A	A	D	D
Critical Lane Group	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.53	0.38	0.38	0.39	0.80	0.25
50th-Percentile Queue Length [ft/ln]	13.36	9.43	9.42	9.85	20.06	6.28
95th-Percentile Queue Length [veh/ln]	0.96	0.68	0.68	0.71	1.44	0.45
95th-Percentile Queue Length [ft/ln]	24.05	16.97	16.96	17.72	36.11	11.31

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	3.13	1.32	1.39	1.44	45.03	42.14
Movement LOS	A	A	A	A	D	D
d_A, Approach Delay [s/veh]	1.57		1.40		44.32	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	2.56					
Intersection LOS	A					
Intersection V/C	0.292					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.65	0.00	34.65
l_p,int, Pedestrian LOS Score for Intersection	2.621	0.000	2.250
Crosswalk LOS	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1201	1201	623
d_b, Bicycle Delay [s]	7.19	7.19	21.34
l_b,int, Bicycle LOS Score for Intersection	2.403	2.182	1.560
Bicycle LOS	B	B	A

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 6: Lakewood Boulevard at Conant Street

Control Type:	Signalized	Delay (sec / veh):	20.7
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.618

Intersection Setup

Name	Lakewood Boulevard			Lakewood Boulevard			Conant Street			Conant 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	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	No			Yes			Yes			Yes		

Volumes

Name	Lakewood Boulevard			Lakewood Boulevard			Conant Street			Conant Street		
Base Volume Input [veh/h]	292	1061	212	88	1416	27	4	81	212	31	161	72
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	292	1061	212	88	1416	27	4	81	212	31	161	72
Peak Hour Factor	0.8580	0.8580	0.8580	0.8580	0.8580	0.8580	0.8580	0.8580	0.8580	0.8580	0.8580	0.8580
Other Adjustment Factor	1.0000	1.0000	1.0000	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	309	62	26	413	8	1	24	62	9	47	21
Total Analysis Volume [veh/h]	340	1237	247	103	1650	31	5	94	247	36	188	84
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	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	6	10	0	0	10	0	6	10	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	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	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	24	46	0	10	32	0	0	29	0	10	39	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	21	0	0	0	0	0	28	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	2.0	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	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	L	C	C	L	C	R	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]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	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	0.00	2.00	2.00
g_i, Effective Green Time [s]	12	56	56	6	50	50	14	14	14	21	21	21
g / C, Green / Cycle	0.12	0.59	0.59	0.06	0.52	0.52	0.14	0.14	0.14	0.22	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.10	0.24	0.16	0.03	0.31	0.31	0.00	0.05	0.09	0.03	0.10	0.05
s, saturation flow rate [veh/h]	3459	5094	1589	3459	3560	1852	1107	1870	2813	1239	1870	1589
c, Capacity [veh/h]	430	3005	938	206	1870	973	110	267	402	340	419	356
d1, Uniform Delay [s]	40.44	10.55	9.46	43.34	15.54	15.54	44.81	36.78	38.29	29.32	31.81	30.20
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	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	1.00	1.00
d2, Incremental Delay [s]	3.31	0.42	0.68	1.88	1.38	2.64	0.17	0.79	1.53	0.14	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	0.79	0.41	0.26	0.50	0.59	0.59	0.05	0.35	0.61	0.11	0.45	0.24
d, Delay for Lane Group [s/veh]	43.75	10.97	10.15	45.22	16.92	18.18	44.98	37.57	39.83	29.45	32.56	30.54
Lane Group LOS	D	B	B	D	B	B	D	D	D	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.01	4.45	2.50	1.22	8.10	8.78	0.12	2.01	2.76	0.66	3.76	1.59
50th-Percentile Queue Length [ft/ln]	100.35	111.16	62.59	30.47	202.58	219.43	2.97	50.26	68.89	16.47	94.04	39.81
95th-Percentile Queue Length [veh/ln]	7.23	7.90	4.51	2.19	12.77	13.64	0.21	3.62	4.96	1.19	6.77	2.87
95th-Percentile Queue Length [ft/ln]	180.64	197.61	112.66	54.85	319.29	340.89	5.35	90.47	123.99	29.64	169.28	71.65

Movement, Approach, & Intersection Results

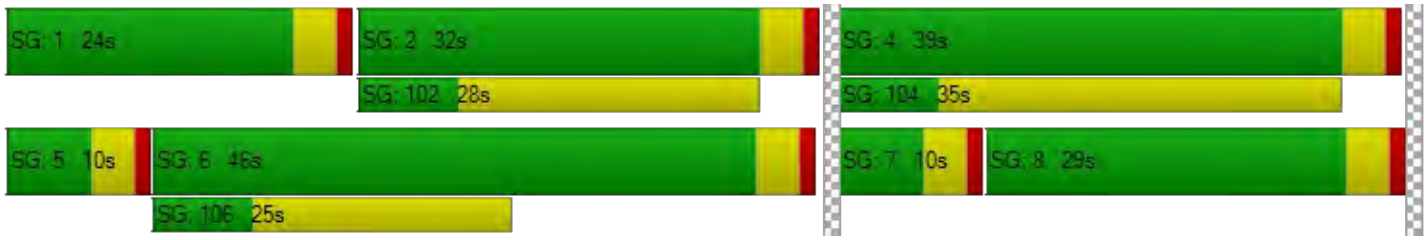
d_M, Delay for Movement [s/veh]	43.75	10.97	10.15	45.22	17.34	18.18	44.98	37.57	39.83	29.45	32.56	30.54
Movement LOS	D	B	B	D	B	B	D	D	D	C	C	C
d_A, Approach Delay [s/veh]	16.97			18.96			39.29			31.64		
Approach LOS	B			B			D			C		
d_I, Intersection Delay [s/veh]	20.68											
Intersection LOS	C											
Intersection V/C	0.618											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	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]	0.00	37.16	37.16	37.16
l_p,int, Pedestrian LOS Score for Intersection	0.000	3.114	2.602	2.449
Crosswalk LOS	F	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	884	589	526	737
d_b, Bicycle Delay [s]	14.80	23.64	25.81	18.96
l_b,int, Bicycle LOS Score for Intersection	2.563	2.541	2.131	2.068
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 7: Faculty Avenue at Conant Street

Control Type:	Signalized	Delay (sec / veh):	2.2
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.240

Intersection Setup

Name	Faculty Avenue		Conant Street		Conant Street	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Faculty Avenue		Conant Street		Conant Street	
Base Volume Input [veh/h]	1	13	218	123	246	29
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	13	218	123	246	29
Peak Hour Factor	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	3	57	32	65	8
Total Analysis Volume [veh/h]	1	14	229	129	258	30
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	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	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	7	0	0	2	6	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	6	0	0	10	10	0
Maximum Green [s]	30	0	0	30	30	0
Amber [s]	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	29	0	0	61	61	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	7	0	0	7	7	0
Pedestrian Clearance [s]	18	0	0	11	11	0
Delayed Vehicle Green [s]	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	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	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
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	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
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	2.00	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]	2	2	80	80	80	80
g / C, Green / Cycle	0.02	0.02	0.89	0.89	0.89	0.89
(v / s)_i Volume / Saturation Flow Rate	0.00	0.01	0.21	0.04	0.08	0.08
s, saturation flow rate [veh/h]	1781	1589	1091	3560	1870	1804
c, Capacity [veh/h]	39	35	1006	3165	1663	1604
d1, Uniform Delay [s]	43.03	43.39	1.30	0.57	0.60	0.60
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]	0.26	7.25	0.53	0.02	0.10	0.11
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	0.03	0.40	0.23	0.04	0.09	0.09
d, Delay for Lane Group [s/veh]	43.29	50.64	1.82	0.60	0.70	0.71
Lane Group LOS	D	D	A	A	A	A
Critical Lane Group	No	Yes	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	0.02	0.38	0.44	0.01	0.05	0.05
50th-Percentile Queue Length [ft/ln]	0.61	9.38	10.93	0.27	1.19	1.23
95th-Percentile Queue Length [veh/ln]	0.04	0.68	0.79	0.02	0.09	0.09
95th-Percentile Queue Length [ft/ln]	1.10	16.88	19.67	0.48	2.13	2.22

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	43.29	50.64	1.82	0.60	0.71	0.71
Movement LOS	D	D	A	A	A	A
d_A, Approach Delay [s/veh]	50.15		1.38		0.71	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	2.19					
Intersection LOS	A					
Intersection V/C	0.240					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.65	34.65	34.65
l_p,int, Pedestrian LOS Score for Intersection	2.354	2.422	2.232
Crosswalk LOS	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	556	1267	1267
d_b, Bicycle Delay [s]	23.45	6.04	6.04
l_b,int, Bicycle LOS Score for Intersection	1.560	1.855	1.797
Bicycle LOS	A	A	A

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 8: Clark Avenue at Conant Street

Control Type:	Signalized	Delay (sec / veh):	9.5
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.441

Intersection Setup

Name	Clark Avenue			Clark Avenue			Conant Street			Conant 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	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			Yes			Yes		

Volumes

Name	Clark Avenue			Clark Avenue			Conant Street			Conant Street		
Base Volume Input [veh/h]	159	712	15	7	422	59	35	16	64	33	75	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	159	712	15	7	422	59	35	16	64	33	75	28
Peak Hour Factor	0.7190	0.7190	0.7190	0.7190	0.7190	0.7190	0.7190	0.7190	0.7190	0.7190	0.7190	0.7190
Other Adjustment Factor	1.0000	1.0000	1.0000	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	248	5	2	147	21	12	6	22	11	26	10
Total Analysis Volume [veh/h]	221	990	21	10	587	82	49	22	89	46	104	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]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	0	10	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	32	0	0	32	0	0	58	0	0	58	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	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	21	0	0	18	0	0	21	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	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	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	C	C	L	C	C	L	C	R	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]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	2.00
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]	70	70	70	70	70	70	12	12	12	12
g / C, Green / Cycle	0.78	0.78	0.78	0.78	0.78	0.78	0.14	0.14	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.29	0.27	0.27	0.02	0.18	0.18	0.04	0.01	0.06	0.11
s, saturation flow rate [veh/h]	768	1870	1856	557	1870	1791	1245	1870	1589	1665
c, Capacity [veh/h]	611	1451	1441	446	1451	1390	91	252	214	274
d1, Uniform Delay [s]	6.01	3.09	3.09	5.39	2.76	2.76	37.12	34.01	35.60	37.80
k, delay calibration	0.50	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]	1.66	0.67	0.67	0.09	0.38	0.40	4.83	0.15	1.28	3.07
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	0.36	0.35	0.35	0.02	0.24	0.24	0.54	0.09	0.41	0.69
d, Delay for Lane Group [s/veh]	7.67	3.76	3.76	5.49	3.14	3.16	41.95	34.16	36.88	40.86
Lane Group LOS	A	A	A	A	A	A	D	C	D	D
Critical Lane Group	Yes	No	No	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.78	2.16	2.15	0.07	1.29	1.24	1.14	0.43	1.84	4.22
50th-Percentile Queue Length [ft/ln]	44.48	53.94	53.63	1.74	32.15	31.10	28.38	10.67	46.02	105.48
95th-Percentile Queue Length [veh/ln]	3.20	3.88	3.86	0.13	2.31	2.24	2.04	0.77	3.31	7.59
95th-Percentile Queue Length [ft/ln]	80.07	97.08	96.53	3.13	57.86	55.98	51.08	19.21	82.83	189.70

Movement, Approach, & Intersection Results

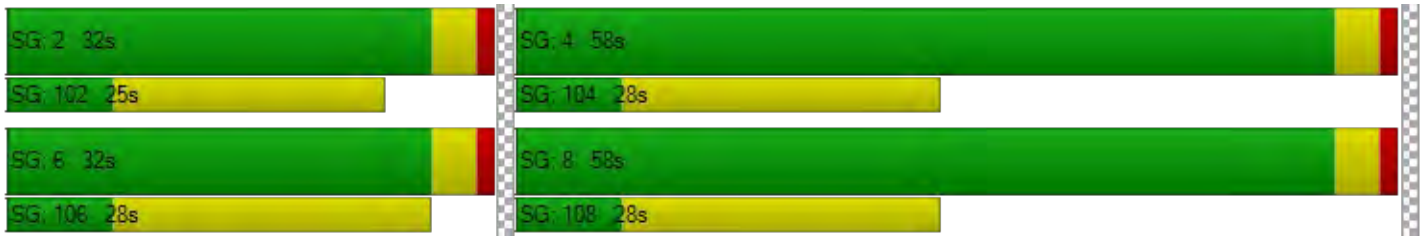
d_M, Delay for Movement [s/veh]	7.67	3.76	3.76	5.49	3.15	3.16	41.95	34.16	36.88	40.86	40.86	40.86
Movement LOS	A	A	A	A	A	A	D	C	D	D	D	D
d_A, Approach Delay [s/veh]	4.46			3.18			38.06			40.86		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	9.50											
Intersection LOS	A											
Intersection V/C	0.441											

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]	34.63	34.63	34.63	34.63
l_p,int, Pedestrian LOS Score for Intersection	2.746	2.712	2.859	2.204
Crosswalk LOS	B	B	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	623	623	1201	1201
d_b, Bicycle Delay [s]	21.32	21.32	7.17	7.17
l_b,int, Bicycle LOS Score for Intersection	2.576	2.120	1.824	1.871
Bicycle LOS	B	B	A	A

Sequence

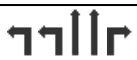
Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 9: Lakewood Boulevard at Wardlow Road

Control Type:	Signalized	Delay (sec / veh):	29.7
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.611

Intersection Setup

Name	Lakewood Boulevard			Lakewood Boulevard			Wardlow Road			Wardlow 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	0	1	0	0	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	Lakewood Boulevard			Lakewood Boulevard			Wardlow Road			Wardlow Road		
Base Volume Input [veh/h]	291	1411	158	190	1256	81	48	24	22	360	89	222
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	291	1411	158	190	1256	81	48	24	22	360	89	222
Peak Hour Factor	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270
Other Adjustment Factor	1.0000	1.0000	1.0000	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	427	48	57	380	24	15	7	7	109	27	67
Total Analysis Volume [veh/h]	352	1706	191	230	1519	98	58	29	27	435	108	268
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	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	10	0	6	10	0	6	10	0	6	10	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	40	0	13	35	0	10	46	0	21	57	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	24	0	0	24	0	0	35	0	0	35	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	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]	14	67	67	9	62	62	5	11	11	17	23	23
g / C, Green / Cycle	0.12	0.56	0.56	0.08	0.52	0.52	0.04	0.09	0.09	0.14	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.10	0.28	0.28	0.07	0.23	0.23	0.02	0.01	0.02	0.13	0.03	0.17
s, saturation flow rate [veh/h]	3459	5094	1749	3459	5094	1796	3459	3560	1589	3459	3560	1589
c, Capacity [veh/h]	405	2843	976	262	2631	928	151	328	146	488	674	301
d1, Uniform Delay [s]	52.09	16.22	16.23	54.95	18.33	18.33	55.85	49.90	50.34	50.67	40.68	47.44
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	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	1.00	1.00
d2, Incremental Delay [s]	5.80	0.62	1.81	9.24	0.57	1.60	1.60	0.12	0.60	5.89	0.11	8.88
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	0.87	0.50	0.50	0.88	0.45	0.45	0.38	0.09	0.18	0.89	0.16	0.89
d, Delay for Lane Group [s/veh]	57.89	16.84	18.04	64.19	18.90	19.93	57.45	50.01	50.94	56.56	40.79	56.32
Lane Group LOS	E	B	B	E	B	B	E	D	D	E	D	E
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	5.53	7.86	8.43	3.78	7.01	7.69	0.89	0.41	0.78	6.81	1.36	8.53
50th-Percentile Queue Length [ft/ln]	138.26	196.47	210.81	94.47	175.37	192.23	22.24	10.15	19.43	170.22	33.88	213.17
95th-Percentile Queue Length [veh/ln]	9.39	12.46	13.19	6.80	11.36	12.24	1.60	0.73	1.40	11.09	2.44	13.32
95th-Percentile Queue Length [ft/ln]	234.68	311.41	329.87	170.04	283.96	305.93	40.02	18.26	34.97	277.21	60.98	332.89

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	57.89	17.05	18.04	64.19	19.12	19.93	57.45	50.01	50.94	56.56	40.79	56.32
Movement LOS	E	B	B	E	B	B	E	D	D	E	D	E
d_A, Approach Delay [s/veh]	23.52			24.77			54.02			54.38		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	29.66											
Intersection LOS	C											
Intersection V/C	0.611											

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	3.393	3.358	2.936	2.783
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]	600	517	700	883
d_b, Bicycle Delay [s]	29.41	33.02	25.36	18.72
l_b,int, Bicycle LOS Score for Intersection	2.487	2.321	1.654	2.229
Bicycle LOS	B	B	A	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 10: Clark Avenue at Wardlow Avenue

Control Type:	Signalized	Delay (sec / veh):	17.7
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.457

Intersection Setup

Name	Clark Avenue			Clark Avenue			Wardlow Avenue			Wardlow Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	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	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			Yes			Yes		

Volumes

Name	Clark Avenue			Clark Avenue			Wardlow Avenue			Wardlow Avenue		
Base Volume Input [veh/h]	50	670	76	65	397	83	62	259	40	87	549	127
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	50	670	76	65	397	83	62	259	40	87	549	127
Peak Hour Factor	0.9280	0.9280	0.9280	0.9280	0.9280	0.9280	0.9280	0.9280	0.9280	0.9280	0.9280	0.9280
Other Adjustment Factor	1.0000	1.0000	1.0000	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	180	20	18	107	22	17	70	11	23	148	34
Total Analysis Volume [veh/h]	54	722	82	70	428	89	67	279	43	94	592	137
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]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	0	10	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	39	0	0	39	0	0	51	0	0	51	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	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	28	0	0	21	0	0	24	0	0	24	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	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	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	C	C	L	C	C	L	C	C	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]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	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	2.00
g_i, Effective Green Time [s]	49	49	49	49	49	49	33	33	33	33	33
g / C, Green / Cycle	0.54	0.54	0.54	0.54	0.54	0.54	0.37	0.37	0.37	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.06	0.15	0.15	0.10	0.10	0.10	0.09	0.09	0.09	0.27	0.26
s, saturation flow rate [veh/h]	884	3560	1775	677	3560	1713	726	1870	1785	1530	1609
c, Capacity [veh/h]	498	1932	963	379	1932	930	168	689	657	613	592
d1, Uniform Delay [s]	13.33	11.07	11.09	15.62	10.42	10.45	38.33	19.67	19.71	24.66	24.25
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	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	1.00
d2, Incremental Delay [s]	0.44	0.36	0.72	1.07	0.20	0.44	1.54	0.18	0.19	1.23	1.55
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	0.11	0.28	0.28	0.18	0.18	0.18	0.40	0.24	0.24	0.66	0.70
d, Delay for Lane Group [s/veh]	13.77	11.43	11.81	16.69	10.62	10.89	39.87	19.85	19.89	25.89	25.79
Lane Group LOS	B	B	B	B	B	B	D	B	B	C	C
Critical Lane Group	No	No	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.65	2.79	2.91	0.98	1.69	1.75	1.48	2.34	2.28	7.41	7.52
50th-Percentile Queue Length [ft/ln]	16.36	69.84	72.76	24.46	42.36	43.63	36.99	58.52	56.91	185.28	187.91
95th-Percentile Queue Length [veh/ln]	1.18	5.03	5.24	1.76	3.05	3.14	2.66	4.21	4.10	11.88	12.01
95th-Percentile Queue Length [ft/ln]	29.45	125.71	130.97	44.02	76.25	78.54	66.58	105.34	102.45	296.90	300.32

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	13.77	11.53	11.81	16.69	10.67	10.89	39.87	19.87	19.89	25.89	25.84	25.79
Movement LOS	B	B	B	B	B	B	D	B	B	C	C	C
d_A, Approach Delay [s/veh]	11.70			11.42			23.32			25.84		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	17.72											
Intersection LOS	B											
Intersection V/C	0.457											

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]	34.67	34.67	34.67	34.67
l_p,int, Pedestrian LOS Score for Intersection	2.925	2.899	2.595	2.536
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	778	778	1044	1044
d_b, Bicycle Delay [s]	16.81	16.81	10.27	10.27
l_b,int, Bicycle LOS Score for Intersection	2.032	1.882	1.881	2.239
Bicycle LOS	B	A	A	B

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 1: Lakewood Boulevard at Carson Street

Control Type:	Signalized	Delay (sec / veh):	35.9
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.580

Intersection Setup

Name	Lakewood Boulevard			Lakewood Boulevard			Carson Street			Carson 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	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	Lakewood Boulevard			Lakewood Boulevard			Carson Street			Carson Street		
Base Volume Input [veh/h]	264	1031	291	79	632	94	328	932	196	219	655	72
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	264	1031	291	79	632	94	328	932	196	219	655	72
Peak Hour Factor	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	67	263	74	20	161	24	84	238	50	56	167	18
Total Analysis Volume [veh/h]	269	1051	297	81	644	96	334	950	200	223	668	73
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	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	1	6	6	5	2	0	3	8	8	7	4	0
Auxiliary Signal Groups			6,7						1,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	10	10	6	10	0	6	10	10	6	10	0
Maximum Green [s]	30	30	30	30	30	0	30	30	30	30	30	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	16	47	47	11	42	0	23	46	46	16	39	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	28	28	0	31	0	0	35	35	0	28	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	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No	No	No	No	
Maximum Recall	No	No	No	No	No		No	No	No	No	No	
Pedestrian Recall	No	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	R	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	0.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	58	74	7	53	53	14	27	43	12	25	25
g / C, Green / Cycle	0.10	0.48	0.62	0.06	0.44	0.44	0.12	0.22	0.36	0.10	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.08	0.21	0.19	0.05	0.11	0.11	0.10	0.19	0.13	0.06	0.14	0.14
s, saturation flow rate [veh/h]	3459	5094	1589	1781	5094	1717	3459	5094	1589	3459	3560	1778
c, Capacity [veh/h]	348	2461	981	104	2245	757	401	1146	570	348	746	373
d1, Uniform Delay [s]	52.67	20.21	10.83	55.79	21.05	21.12	51.94	44.33	28.23	51.92	43.53	43.57
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	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	1.00	1.00
d2, Incremental Delay [s]	3.69	0.54	0.80	12.03	0.26	0.80	4.58	1.61	0.37	1.98	1.01	2.04
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	0.77	0.43	0.30	0.78	0.24	0.25	0.83	0.83	0.35	0.64	0.66	0.66
d, Delay for Lane Group [s/veh]	56.36	20.75	11.63	67.82	21.31	21.92	56.53	45.94	28.60	53.89	44.54	45.61
Lane Group LOS	E	C	B	E	C	C	E	D	C	D	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.13	6.45	3.82	2.77	3.29	3.54	5.17	9.11	4.29	3.33	6.82	6.97
50th-Percentile Queue Length [ft/ln]	103.32	161.22	95.58	69.18	82.17	88.51	129.32	227.71	107.30	83.18	170.62	174.15
95th-Percentile Queue Length [veh/ln]	7.44	10.61	6.88	4.98	5.92	6.37	8.90	14.06	7.69	5.99	11.11	11.29
95th-Percentile Queue Length [ft/ln]	185.98	265.33	172.04	124.52	147.91	159.32	222.56	351.45	192.25	149.72	277.74	282.37

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	56.36	20.75	11.63	67.82	21.40	21.92	56.53	45.94	28.60	53.89	44.82	45.61
Movement LOS	E	C	B	E	C	C	E	D	C	D	D	D
d_A, Approach Delay [s/veh]	25.00			26.04			45.98			46.98		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	35.88											
Intersection LOS	D											
Intersection V/C	0.580											

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	3.242	3.017	3.136	3.019
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	633	700	583
d_b, Bicycle Delay [s]	24.72	28.03	25.36	30.12
l_b,int, Bicycle LOS Score for Intersection	2.449	1.898	2.376	2.090
Bicycle LOS	B	A	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: Faculty Avenue at Carson Street

Control Type:	Two-way stop	Delay (sec / veh):	25.9
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.075

Intersection Setup

Name	Faculty Avenue		Carson Street		Carson Street	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		40.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Faculty Avenue		Carson Street		Carson Street	
Base Volume Input [veh/h]	14	70	93	1195	846	52
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	70	93	1195	846	52
Peak Hour Factor	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	18	24	313	221	14
Total Analysis Volume [veh/h]	15	73	97	1251	886	54
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.16	0.13	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	25.91	15.67	10.73	0.00	0.00	0.00
Movement LOS	D	C	B	A	A	A
95th-Percentile Queue Length [veh/ln]	0.89	0.89	0.46	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	22.26	22.26	11.52	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	17.41		0.77		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	1.08					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 3: Clark Avenue at Carson Street

Control Type:	Signalized	Delay (sec / veh):	30.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.651

Intersection Setup

Name	Clark Avenue			Clark Avenue			Carson Street			Carson 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	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	Clark Avenue			Clark Avenue			Carson Street			Carson Street		
Base Volume Input [veh/h]	128	527	310	85	411	85	97	949	145	105	638	92
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
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	527	310	85	411	85	97	949	145	105	638	92
Peak Hour Factor	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470
Other Adjustment Factor	1.0000	1.0000	1.0000	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	139	82	22	109	22	26	251	38	28	168	24
Total Analysis Volume [veh/h]	135	556	327	90	434	90	102	1002	153	111	674	97
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	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	3	8	8	7	4	0	5	2	2	1	6	0
Auxiliary Signal Groups			1,8						2,3			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	10	10	6	10	0	6	10	10	6	10	0
Maximum Green [s]	30	30	30	30	30	0	30	30	30	30	30	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	10	50	50	10	50	0	16	35	35	10	29	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	28	28	0	28	0	0	24	24	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]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No	No	No	No	
Maximum Recall	No	No	No	No	No		No	No	No	No	No	
Pedestrian Recall	No	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	R	L	C	C
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	0.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	34	44	6	34	34	8	43	53	6	42	42
g / C, Green / Cycle	0.06	0.33	0.42	0.05	0.32	0.32	0.07	0.41	0.51	0.06	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.04	0.30	0.12	0.03	0.14	0.14	0.06	0.20	0.10	0.03	0.14	0.15
s, saturation flow rate [veh/h]	3459	1870	2813	3459	1870	1760	1781	5094	1589	3459	3560	1753
c, Capacity [veh/h]	200	608	1185	187	600	565	130	2092	805	200	1409	694
d1, Uniform Delay [s]	48.54	34.07	19.93	48.30	28.29	28.33	47.91	22.72	14.15	48.19	22.44	22.48
k, delay calibration	0.11	0.22	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]	3.90	11.02	0.13	1.93	0.52	0.56	9.86	0.79	0.52	2.38	0.73	1.51
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	0.67	0.91	0.28	0.48	0.45	0.45	0.78	0.48	0.19	0.55	0.37	0.37
d, Delay for Lane Group [s/veh]	52.43	45.09	20.05	50.23	28.82	28.89	57.77	23.51	14.67	50.57	23.18	23.99
Lane Group LOS	D	D	C	D	C	C	E	C	B	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.84	15.17	2.61	1.19	5.40	5.14	2.97	6.09	2.06	1.48	4.58	4.71
50th-Percentile Queue Length [ft/ln]	45.94	379.14	65.37	29.82	135.11	128.53	74.32	152.32	51.58	36.95	114.41	117.65
95th-Percentile Queue Length [veh/ln]	3.31	21.55	4.71	2.15	9.22	8.86	5.35	10.14	3.71	2.66	8.08	8.26
95th-Percentile Queue Length [ft/ln]	82.70	538.81	117.67	53.68	230.42	221.49	133.77	253.52	92.85	66.51	202.11	206.59

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	52.43	45.09	20.05	50.23	28.85	28.89	57.77	23.51	14.67	50.57	23.37	23.99
Movement LOS	D	D	C	D	C	C	E	C	B	D	C	C
d_A, Approach Delay [s/veh]	38.02			31.99			25.21			26.86		
Approach LOS	D			C			C			C		
d_I, Intersection Delay [s/veh]	30.16											
Intersection LOS	C											
Intersection V/C	0.651											

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	2.840	2.574	2.996	3.013
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]	876	876	590	476
d_b, Bicycle Delay [s]	16.60	16.60	26.10	30.50
l_b,int, Bicycle LOS Score for Intersection	3.239	2.066	2.251	2.045
Bicycle LOS	C	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 4: Bellflower Boulevard at Carson Street

Control Type:	Signalized	Delay (sec / veh):	32.1
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.759

Intersection Setup

Name	Bellflower Boulevard			Bellflower Boulevard			Carson Street			Carson 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	Bellflower Boulevard			Bellflower Boulevard			Carson Street			Carson Street		
Base Volume Input [veh/h]	131	853	141	104	447	59	154	1091	98	125	656	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	131	853	141	104	447	59	154	1091	98	125	656	143
Peak Hour Factor	0.9360	0.9360	0.9360	0.9360	0.9360	0.9360	0.9360	0.9360	0.9360	0.9360	0.9360	0.9360
Other Adjustment Factor	1.0000	1.0000	1.0000	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	228	38	28	119	16	41	291	26	33	175	38
Total Analysis Volume [veh/h]	140	911	151	111	478	63	165	1166	105	134	701	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]	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	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	10	0	6	10	0	6	10	0	6	10	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	37	0	11	35	0	18	35	0	12	29	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	24	0	0	24	0	0	24	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]	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	C	L	C	C
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]	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	7	25	25	11	37	37	8	34	34
g / C, Green / Cycle	0.10	0.29	0.29	0.07	0.27	0.27	0.11	0.38	0.38	0.08	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.08	0.26	0.09	0.06	0.15	0.15	0.09	0.24	0.24	0.08	0.16	0.16
s, saturation flow rate [veh/h]	1781	3560	1589	1781	1870	1795	1781	3560	1792	1781	3560	1705
c, Capacity [veh/h]	170	1027	459	133	500	480	200	1367	688	151	1269	607
d1, Uniform Delay [s]	42.25	32.37	26.61	43.46	29.93	29.96	41.30	23.69	23.69	43.08	23.52	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]	9.54	2.81	0.42	12.78	0.95	1.00	8.19	2.11	4.14	15.32	1.17	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	0.82	0.89	0.33	0.84	0.55	0.55	0.82	0.62	0.62	0.89	0.45	0.46
d, Delay for Lane Group [s/veh]	51.79	35.18	27.03	56.24	30.88	30.95	49.49	25.80	27.83	58.40	24.69	26.04
Lane Group LOS	D	D	C	E	C	C	D	C	C	E	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.64	10.14	2.71	3.02	5.45	5.26	4.20	7.82	8.26	3.73	5.05	5.11
50th-Percentile Queue Length [ft/ln]	91.09	253.39	67.66	75.61	136.20	131.55	104.91	195.40	206.40	93.23	126.23	127.67
95th-Percentile Queue Length [veh/ln]	6.56	15.36	4.87	5.44	9.28	9.02	7.55	12.40	12.97	6.71	8.73	8.81
95th-Percentile Queue Length [ft/ln]	163.96	383.91	121.78	136.10	231.89	225.59	188.83	310.02	324.21	167.82	218.36	220.32

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	51.79	35.18	27.03	56.24	30.91	30.95	49.49	26.36	27.83	58.40	24.93	26.04
Movement LOS	D	D	C	E	C	C	D	C	C	E	C	C
d_A, Approach Delay [s/veh]	36.09			35.23			29.12			29.64		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	32.13											
Intersection LOS	C											
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]	37.18	37.18	37.18	37.18
l_p,int, Pedestrian LOS Score for Intersection	2.767	2.669	2.922	2.933
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]	694	652	652	526
d_b, Bicycle Delay [s]	20.27	21.59	21.59	25.83
l_b,int, Bicycle LOS Score for Intersection	2.551	2.098	2.349	2.103
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 5: Clark Avenue at Lew Davis Street

Control Type:	Signalized	Delay (sec / veh):	8.4
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.473

Intersection Setup

Name	Clark Avenue		Clark Avenue		Lew Davis Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	Clark Avenue		Clark Avenue		Lew Davis Street	
Base Volume Input [veh/h]	23	919	548	38	148	73
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	919	548	38	148	73
Peak Hour Factor	0.7930	0.7930	0.7930	0.7930	0.7930	0.7930
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	290	173	12	47	23
Total Analysis Volume [veh/h]	29	1159	691	48	187	92
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	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	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	0	6	2	0	3	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	0	10	10	0	6	0
Maximum Green [s]	0	30	30	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	1.0	0.0
Split [s]	0	33	33	0	57	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	7	7	0	7	0
Pedestrian Clearance [s]	0	14	14	0	21	0
Delayed Vehicle Green [s]	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	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	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
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	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	C	L	R
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]	2.00	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]	70	70	70	70	12	12
g / C, Green / Cycle	0.78	0.78	0.78	0.78	0.13	0.13
(v / s)_i Volume / Saturation Flow Rate	0.04	0.33	0.20	0.20	0.11	0.06
s, saturation flow rate [veh/h]	719	3560	1870	1828	1781	1589
c, Capacity [veh/h]	576	2776	1458	1425	234	209
d1, Uniform Delay [s]	4.52	3.23	2.72	2.73	37.87	35.97
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.17	0.46	0.42	0.44	6.21	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	0.05	0.42	0.25	0.26	0.80	0.44
d, Delay for Lane Group [s/veh]	4.68	3.70	3.14	3.18	44.07	37.43
Lane Group LOS	A	A	A	A	D	D
Critical Lane Group	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.17	2.43	1.38	1.39	4.33	1.92
50th-Percentile Queue Length [ft/ln]	4.34	60.72	34.38	34.69	108.34	48.04
95th-Percentile Queue Length [veh/ln]	0.31	4.37	2.48	2.50	7.75	3.46
95th-Percentile Queue Length [ft/ln]	7.82	109.29	61.89	62.44	193.69	86.47

Movement, Approach, & Intersection Results

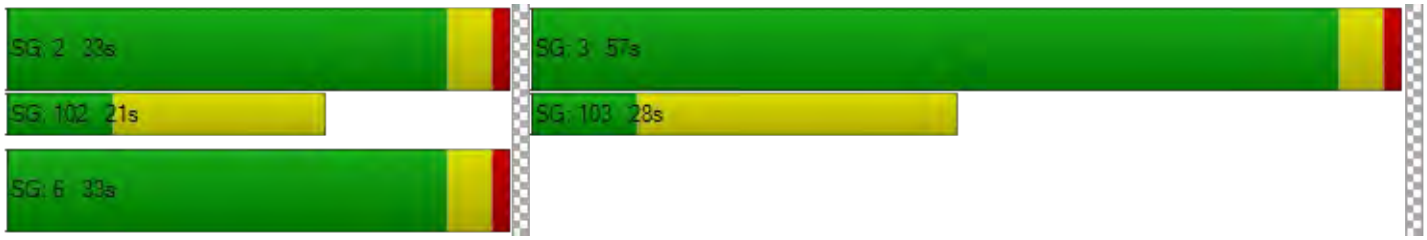
d_M, Delay for Movement [s/veh]	4.68	3.70	3.16	3.18	44.07	37.43
Movement LOS	A	A	A	A	D	D
d_A, Approach Delay [s/veh]	3.72		3.16		41.88	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	8.36					
Intersection LOS	A					
Intersection V/C	0.473					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.63	0.00	34.63
l_p,int, Pedestrian LOS Score for Intersection	2.684	0.000	2.097
Crosswalk LOS	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	645	645	1179
d_b, Bicycle Delay [s]	20.63	20.63	7.58
l_b,int, Bicycle LOS Score for Intersection	2.540	2.169	1.560
Bicycle LOS	B	B	A

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: Lakewood Boulevard at Conant Street

Control Type:	Signalized	Delay (sec / veh):	20.4
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.595

Intersection Setup

Name	Lakewood Boulevard			Lakewood Boulevard			Conant Street			Conant 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	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	No			Yes			Yes			Yes		

Volumes

Name	Lakewood Boulevard			Lakewood Boulevard			Conant Street			Conant Street		
Base Volume Input [veh/h]	146	1316	70	62	1034	7	19	128	348	100	115	77
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	146	1316	70	62	1034	7	19	128	348	100	115	77
Peak Hour Factor	0.9110	0.9110	0.9110	0.9110	0.9110	0.9110	0.9110	0.9110	0.9110	0.9110	0.9110	0.9110
Other Adjustment Factor	1.0000	1.0000	1.0000	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	361	19	17	284	2	5	35	95	27	32	21
Total Analysis Volume [veh/h]	160	1445	77	68	1135	8	21	141	382	110	126	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]	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	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	6	10	0	0	10	0	6	10	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	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	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	10	32	0	10	32	0	0	38	0	10	48	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	21	0	0	0	0	0	28	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	2.0	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	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	L	C	C	L	C	R	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]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	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	0.00	2.00	2.00
g_i, Effective Green Time [s]	6	48	48	5	47	47	15	15	15	25	25	25
g / C, Green / Cycle	0.07	0.53	0.53	0.06	0.52	0.52	0.17	0.17	0.17	0.28	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.05	0.28	0.05	0.02	0.21	0.21	0.02	0.08	0.14	0.09	0.07	0.05
s, saturation flow rate [veh/h]	3459	5094	1589	3459	3560	1863	1170	1870	2813	1164	1870	1589
c, Capacity [veh/h]	233	2707	845	193	1850	968	195	316	476	388	523	445
d1, Uniform Delay [s]	41.12	13.82	10.41	41.01	13.18	13.18	37.33	33.66	36.01	25.14	25.07	24.71
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	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	1.00	1.00
d2, Incremental Delay [s]	3.57	0.76	0.21	1.10	0.66	1.26	0.24	0.98	3.20	0.40	0.24	0.21
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	0.69	0.53	0.09	0.35	0.41	0.41	0.11	0.45	0.80	0.28	0.24	0.19
d, Delay for Lane Group [s/veh]	44.69	14.58	10.62	42.11	13.84	14.44	37.57	34.65	39.22	25.54	25.31	24.91
Lane Group LOS	D	B	B	D	B	B	D	C	D	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.83	6.11	0.76	0.75	4.50	4.87	0.43	2.82	4.17	1.82	2.08	1.39
50th-Percentile Queue Length [ft/ln]	45.81	152.81	19.07	18.73	112.40	121.69	10.85	70.48	104.31	45.51	52.07	34.68
95th-Percentile Queue Length [veh/ln]	3.30	10.17	1.37	1.35	7.97	8.49	0.78	5.07	7.51	3.28	3.75	2.50
95th-Percentile Queue Length [ft/ln]	82.45	254.18	34.33	33.72	199.33	212.15	19.54	126.87	187.75	81.91	93.72	62.42

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	44.69	14.58	10.62	42.11	14.04	14.44	37.57	34.65	39.22	25.54	25.31	24.91
Movement LOS	D	B	B	D	B	B	D	C	D	C	C	C
d_A, Approach Delay [s/veh]	17.27			15.62			37.97			25.28		
Approach LOS	B			B			D			C		
d_I, Intersection Delay [s/veh]	20.42											
Intersection LOS	C											
Intersection V/C	0.595											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	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]	0.00	34.72	34.72	34.72
l_p,int, Pedestrian LOS Score for Intersection	0.000	3.091	2.589	2.418
Crosswalk LOS	F	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	622	622	755	977
d_b, Bicycle Delay [s]	21.40	21.40	17.46	11.79
l_b,int, Bicycle LOS Score for Intersection	2.485	2.226	2.457	2.089
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 7: Faculty Avenue at Conant Street

Control Type:	Signalized	Delay (sec / veh):	14.0
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.168

Intersection Setup

Name	Faculty Avenue		Conant Street		Conant Street	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Faculty Avenue		Conant Street		Conant Street	
Base Volume Input [veh/h]	21	142	51	185	176	19
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	21	142	51	185	176	19
Peak Hour Factor	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	38	14	49	47	5
Total Analysis Volume [veh/h]	22	152	54	197	188	20
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	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	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	7	0	0	2	6	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	6	0	0	10	10	0
Maximum Green [s]	30	0	0	30	30	0
Amber [s]	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	68	0	0	22	22	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	7	0	0	7	7	0
Pedestrian Clearance [s]	18	0	0	11	11	0
Delayed Vehicle Green [s]	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	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	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
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	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
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	2.00	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]	11	11	71	71	71	71
g / C, Green / Cycle	0.12	0.12	0.79	0.79	0.79	0.79
(v / s)_i Volume / Saturation Flow Rate	0.01	0.10	0.05	0.06	0.06	0.06
s, saturation flow rate [veh/h]	1781	1589	1174	3560	1870	1809
c, Capacity [veh/h]	212	189	955	2820	1481	1433
d1, Uniform Delay [s]	35.31	38.56	3.05	2.06	2.06	2.06
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]	0.21	7.79	0.11	0.05	0.09	0.10
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	0.10	0.80	0.06	0.07	0.07	0.07
d, Delay for Lane Group [s/veh]	35.52	46.35	3.17	2.10	2.15	2.16
Lane Group LOS	D	D	A	A	A	A
Critical Lane Group	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.44	3.62	0.23	0.26	0.29	0.29
50th-Percentile Queue Length [ft/ln]	10.96	90.58	5.66	6.48	7.29	7.34
95th-Percentile Queue Length [veh/ln]	0.79	6.52	0.41	0.47	0.52	0.53
95th-Percentile Queue Length [ft/ln]	19.73	163.04	10.20	11.66	13.12	13.21

Movement, Approach, & Intersection Results

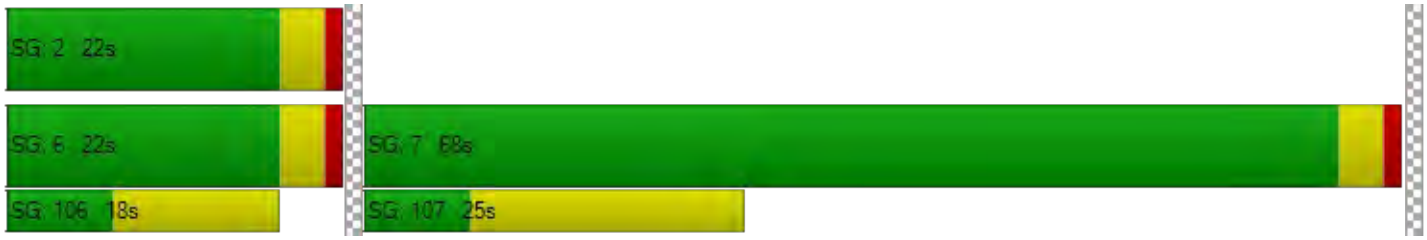
d_M, Delay for Movement [s/veh]	35.52	46.35	3.17	2.10	2.15	2.16
Movement LOS	D	D	A	A	A	A
d_A, Approach Delay [s/veh]	44.98		2.33		2.15	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	14.00					
Intersection LOS	B					
Intersection V/C	0.168					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.63	34.63	34.63
l_p,int, Pedestrian LOS Score for Intersection	2.097	2.415	2.235
Crosswalk LOS	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1424	400	400
d_b, Bicycle Delay [s]	3.73	28.76	28.76
l_b,int, Bicycle LOS Score for Intersection	1.560	1.767	1.731
Bicycle LOS	A	A	A

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 8: Clark Avenue at Conant Street

Control Type:	Signalized	Delay (sec / veh):	10.2
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.437

Intersection Setup

Name	Clark Avenue			Clark Avenue			Conant Street			Conant 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	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			Yes			Yes		

Volumes

Name	Clark Avenue			Clark Avenue			Conant Street			Conant Street		
Base Volume Input [veh/h]	104	818	46	24	514	34	57	65	140	15	32	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	104	818	46	24	514	34	57	65	140	15	32	19
Peak Hour Factor	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070
Other Adjustment Factor	1.0000	1.0000	1.0000	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	253	14	7	159	11	18	20	43	5	10	6
Total Analysis Volume [veh/h]	129	1014	57	30	637	42	71	81	173	19	40	24
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]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	0	10	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	32	0	0	32	0	0	58	0	0	58	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	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	21	0	0	18	0	0	21	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	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	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	C	C	L	C	C	L	C	R	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]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	2.00
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]	70	70	70	70	70	70	12	12	12	12
g / C, Green / Cycle	0.77	0.77	0.77	0.77	0.77	0.77	0.14	0.14	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.17	0.29	0.29	0.06	0.18	0.18	0.05	0.04	0.11	0.05
s, saturation flow rate [veh/h]	761	1870	1835	527	1870	1830	1338	1870	1589	1643
c, Capacity [veh/h]	604	1448	1421	420	1448	1417	182	255	217	274
d1, Uniform Delay [s]	5.23	3.21	3.22	5.97	2.80	2.80	36.20	35.00	37.58	35.13
k, delay calibration	0.50	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]	0.81	0.74	0.75	0.33	0.39	0.39	1.36	0.71	6.57	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
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	0.21	0.37	0.37	0.07	0.24	0.24	0.39	0.32	0.80	0.30
d, Delay for Lane Group [s/veh]	6.04	3.95	3.97	6.30	3.18	3.19	37.56	35.71	44.15	35.74
Lane Group LOS	A	A	A	A	A	A	D	D	D	D
Critical Lane Group	No	No	Yes	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.89	2.38	2.35	0.23	1.31	1.29	1.50	1.63	4.02	1.67
50th-Percentile Queue Length [ft/ln]	22.34	59.61	58.72	5.69	32.72	32.16	37.58	40.80	100.57	41.84
95th-Percentile Queue Length [veh/ln]	1.61	4.29	4.23	0.41	2.36	2.32	2.71	2.94	7.24	3.01
95th-Percentile Queue Length [ft/ln]	40.21	107.29	105.70	10.25	58.90	57.89	67.64	73.43	181.03	75.31

Movement, Approach, & Intersection Results

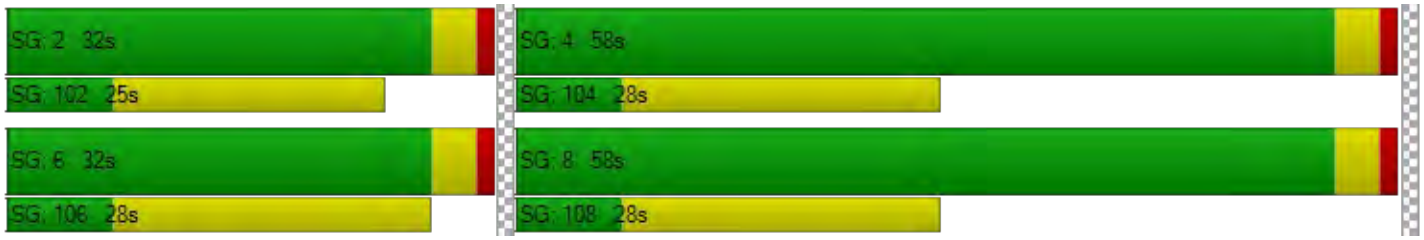
d_M, Delay for Movement [s/veh]	6.04	3.96	3.97	6.30	3.19	3.19	37.56	35.71	44.15	35.74	35.74	35.74
Movement LOS	A	A	A	A	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	4.18			3.32			40.61			35.74		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	10.16											
Intersection LOS	B											
Intersection V/C	0.437											

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]	34.63	34.63	34.63	34.63
l_p,int, Pedestrian LOS Score for Intersection	2.722	2.755	2.723	2.234
Crosswalk LOS	B	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	623	623	1201	1201
d_b, Bicycle Delay [s]	21.32	21.32	7.17	7.17
l_b,int, Bicycle LOS Score for Intersection	2.550	2.145	2.096	1.697
Bicycle LOS	B	B	B	A

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 9: Lakewood Boulevard at Wardlow Road

Control Type:	Signalized	Delay (sec / veh):	20.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.511

Intersection Setup

Name	Lakewood Boulevard			Lakewood Boulevard			Wardlow Road			Wardlow 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	0	1	0	0	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	Lakewood Boulevard			Lakewood Boulevard			Wardlow Road			Wardlow Road		
Base Volume Input [veh/h]	164	1379	272	210	1182	58	64	58	36	144	69	130
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	164	1379	272	210	1182	58	64	58	36	144	69	130
Peak Hour Factor	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340
Other Adjustment Factor	1.0000	1.0000	1.0000	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	369	73	56	316	16	17	16	10	39	18	35
Total Analysis Volume [veh/h]	176	1476	291	225	1266	62	69	62	39	154	74	139
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	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	10	0	6	10	0	6	10	0	6	10	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	35	0	13	36	0	10	46	0	11	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	24	0	0	24	0	0	35	0	0	35	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	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]	7	64	64	9	65	65	5	10	10	7	11	11
g / C, Green / Cycle	0.07	0.60	0.60	0.08	0.62	0.62	0.05	0.10	0.10	0.06	0.11	0.11
(v / s)_i Volume / Saturation Flow Rate	0.05	0.26	0.26	0.07	0.19	0.19	0.02	0.02	0.02	0.04	0.02	0.09
s, saturation flow rate [veh/h]	3459	5094	1673	3459	5094	1813	3459	3560	1589	3459	3560	1589
c, Capacity [veh/h]	241	3075	1010	290	3147	1120	175	346	154	218	391	174
d1, Uniform Delay [s]	47.92	11.17	11.17	47.19	9.51	9.51	48.35	43.60	43.92	48.29	42.54	45.65
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	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	1.00	1.00
d2, Incremental Delay [s]	4.20	0.45	1.35	4.47	0.26	0.73	1.45	0.25	0.85	4.14	0.23	8.03
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	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	0.73	0.43	0.43	0.78	0.31	0.31	0.40	0.18	0.25	0.71	0.19	0.80
d, Delay for Lane Group [s/veh]	52.12	11.61	12.52	51.66	9.76	10.23	49.80	43.85	44.77	52.43	42.77	53.68
Lane Group LOS	D	B	B	D	A	B	D	D	D	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.39	5.31	5.49	3.05	3.40	3.78	0.91	0.75	0.97	2.10	0.89	3.91
50th-Percentile Queue Length [ft/ln]	59.79	132.85	137.27	76.29	85.06	94.60	22.74	18.81	24.37	52.44	22.14	97.72
95th-Percentile Queue Length [veh/ln]	4.30	9.09	9.33	5.49	6.12	6.81	1.64	1.35	1.75	3.78	1.59	7.04
95th-Percentile Queue Length [ft/ln]	107.62	227.36	233.35	137.32	153.11	170.28	40.93	33.86	43.87	94.40	39.86	175.90

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	52.12	11.70	12.52	51.66	9.87	10.23	49.80	43.85	44.77	52.43	42.77	53.68
Movement LOS	D	B	B	D	A	B	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	15.49			15.94			46.47			50.96		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	20.19											
Intersection LOS	C											
Intersection V/C	0.511											

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	3.305	3.289	2.909	2.733
Crosswalk LOS	C	C	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	590	609	800	819
d_b, Bicycle Delay [s]	26.10	25.40	18.93	18.33
l_b,int, Bicycle LOS Score for Intersection	2.361	2.200	1.700	1.862
Bicycle LOS	B	B	A	A

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 10: Clark Avenue at Wardlow Avenue

Control Type:	Signalized	Delay (sec / veh):	15.4
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.328

Intersection Setup

Name	Clark Avenue			Clark Avenue			Wardlow Avenue			Wardlow Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	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	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			Yes			Yes		

Volumes

Name	Clark Avenue			Clark Avenue			Wardlow Avenue			Wardlow Avenue		
Base Volume Input [veh/h]	35	795	102	94	506	53	111	415	36	34	251	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
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	795	102	94	506	53	111	415	36	34	251	63
Peak Hour Factor	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770
Other Adjustment Factor	1.0000	1.0000	1.0000	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	203	26	24	129	14	28	106	9	9	64	16
Total Analysis Volume [veh/h]	36	814	104	96	518	54	114	425	37	35	257	64
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]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	0	10	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	50	0	0	50	0	0	40	0	0	40	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	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	28	0	0	21	0	0	24	0	0	24	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	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	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	C	C	L	C	C	L	C	C	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]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	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	2.00
g_i, Effective Green Time [s]	59	59	59	59	59	59	23	23	23	23	23
g / C, Green / Cycle	0.65	0.65	0.65	0.65	0.65	0.65	0.26	0.26	0.26	0.26	0.26
(v / s)_i Volume / Saturation Flow Rate	0.04	0.17	0.17	0.16	0.11	0.11	0.11	0.12	0.13	0.12	0.12
s, saturation flow rate [veh/h]	840	3560	1764	608	3560	1782	1059	1870	1818	1378	1605
c, Capacity [veh/h]	571	2325	1152	417	2325	1164	230	482	469	404	414
d1, Uniform Delay [s]	8.12	6.54	6.55	10.67	6.06	6.07	37.12	28.32	28.33	27.33	28.05
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	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	1.00
d2, Incremental Delay [s]	0.21	0.28	0.56	1.29	0.15	0.31	1.64	0.76	0.78	0.69	0.77
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	0.06	0.26	0.27	0.23	0.16	0.17	0.49	0.48	0.49	0.42	0.45
d, Delay for Lane Group [s/veh]	8.33	6.82	7.11	11.96	6.21	6.38	38.76	29.07	29.12	28.02	28.83
Lane Group LOS	A	A	A	B	A	A	D	C	C	C	C
Critical Lane Group	No	No	Yes	No	No	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.32	2.22	2.31	1.09	1.27	1.34	2.48	4.29	4.20	2.98	3.42
50th-Percentile Queue Length [ft/ln]	7.88	55.55	57.77	27.29	31.83	33.60	61.99	107.28	104.94	74.57	85.47
95th-Percentile Queue Length [veh/ln]	0.57	4.00	4.16	1.96	2.29	2.42	4.46	7.69	7.56	5.37	6.15
95th-Percentile Queue Length [ft/ln]	14.18	99.99	103.99	49.11	57.30	60.48	111.58	192.22	188.88	134.23	153.85

Movement, Approach, & Intersection Results

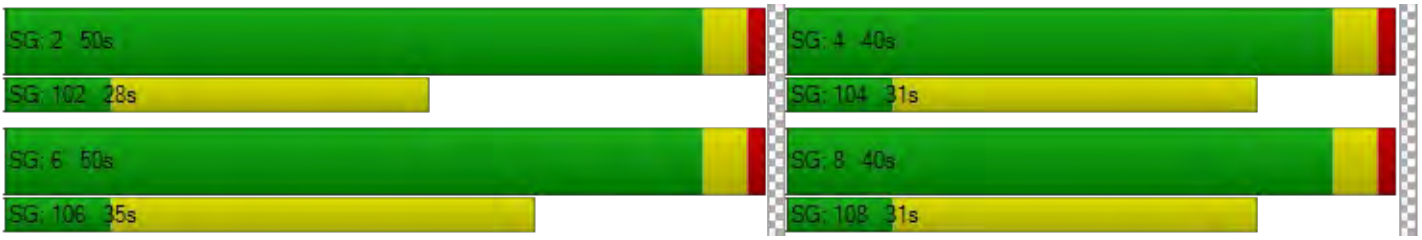
d_M, Delay for Movement [s/veh]	8.33	6.89	7.11	11.96	6.26	6.38	38.76	29.09	29.12	28.02	28.41	28.83
Movement LOS	A	A	A	B	A	A	D	C	C	C	C	C
d_A, Approach Delay [s/veh]	6.97			7.08			31.01			28.45		
Approach LOS	A			A			C			C		
d_I, Intersection Delay [s/veh]	15.41											
Intersection LOS	B											
Intersection V/C	0.328											

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]	34.67	34.67	34.67	34.67
l_p,int, Pedestrian LOS Score for Intersection	2.858	2.987	2.531	2.506
Crosswalk LOS	C	C	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	1022	800	800
d_b, Bicycle Delay [s]	10.76	10.76	16.20	16.20
l_b,int, Bicycle LOS Score for Intersection	2.084	1.927	2.035	1.853
Bicycle LOS	B	A	B	A

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



APPENDIX B-II

EXISTING PLUS PROJECT TRAFFIC CONDITIONS

Intersection Level Of Service Report
Intersection 1: Lakewood Boulevard at Carson Street

Control Type:	Signalized	Delay (sec / veh):	34.8
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.613

Intersection Setup

Name	Lakewood Boulevard			Lakewood Boulevard			Carson Street			Carson 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	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	Lakewood Boulevard			Lakewood Boulevard			Carson Street			Carson Street		
Base Volume Input [veh/h]	173	495	168	146	1245	172	86	853	219	285	725	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
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	495	168	146	1245	172	86	853	219	285	725	26
Peak Hour Factor	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560
Other Adjustment Factor	1.0000	1.0000	1.0000	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	129	44	38	326	45	22	223	57	75	190	7
Total Analysis Volume [veh/h]	181	518	176	153	1302	180	90	892	229	298	758	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]	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	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	1	6	6	5	2	0	3	8	8	7	4	0
Auxiliary Signal Groups			6,7						1,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	10	10	6	10	0	6	10	10	6	10	0
Maximum Green [s]	30	30	30	30	30	0	30	30	30	30	30	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	12	39	39	18	45	0	11	46	46	17	52	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	28	28	0	31	0	0	35	35	0	28	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	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No	No	No	No	
Maximum Recall	No	No	No	No	No		No	No	No	No	No	
Pedestrian Recall	No	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	R	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	0.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	54	70	12	58	58	6	26	38	12	32	32
g / C, Green / Cycle	0.07	0.45	0.59	0.10	0.48	0.48	0.05	0.21	0.31	0.10	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.05	0.10	0.11	0.09	0.22	0.22	0.03	0.18	0.14	0.09	0.15	0.15
s, saturation flow rate [veh/h]	3459	5094	1589	1781	5094	1724	3459	5094	1589	3459	3560	1837
c, Capacity [veh/h]	233	2286	930	181	2460	833	167	1087	499	356	955	493
d1, Uniform Delay [s]	55.10	20.31	11.62	53.02	20.50	20.52	55.82	45.03	33.00	52.85	37.62	37.63
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.14	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	1.00	1.00
d2, Incremental Delay [s]	5.52	0.23	0.45	10.31	0.60	1.76	2.68	1.60	0.85	5.20	0.48	0.93
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	0.78	0.23	0.19	0.85	0.45	0.45	0.54	0.82	0.46	0.84	0.54	0.54
d, Delay for Lane Group [s/veh]	60.62	20.54	12.07	63.33	21.10	22.28	58.51	46.63	33.85	58.05	38.10	38.56
Lane Group LOS	E	C	B	E	C	C	E	D	C	E	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.87	3.02	2.28	5.05	6.89	7.28	1.40	8.58	5.47	4.66	6.58	6.86
50th-Percentile Queue Length [ft/ln]	71.84	75.59	57.03	126.27	172.28	182.11	34.89	214.42	136.73	116.61	164.48	171.52
95th-Percentile Queue Length [veh/ln]	5.17	5.44	4.11	8.74	11.20	11.71	2.51	13.38	9.30	8.21	10.79	11.16
95th-Percentile Queue Length [ft/ln]	129.32	136.05	102.65	218.41	279.91	292.76	62.81	334.49	232.62	205.16	269.65	278.92

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	60.62	20.54	12.07	63.33	21.28	22.28	58.51	46.63	33.85	58.05	38.25	38.56
Movement LOS	E	C	B	E	C	C	E	D	C	E	D	D
d_A, Approach Delay [s/veh]	27.12			25.32			45.10			43.70		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	34.78											
Intersection LOS	C											
Intersection V/C	0.613											

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	3.244	3.016	3.115	3.020
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	700	800
d_b, Bicycle Delay [s]	30.12	26.02	25.36	21.61
l_b,int, Bicycle LOS Score for Intersection	2.041	2.234	2.226	2.155
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: Faculty Avenue at Carson Street

Control Type:	Two-way stop	Delay (sec / veh):	38.6
Analysis Method:	HCM 7th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.198

Intersection Setup

Name	Faculty Avenue		Carson Street		Carson Street	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		40.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Faculty Avenue		Carson Street		Carson Street	
Base Volume Input [veh/h]	30	120	103	967	954	72
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	120	103	967	954	72
Peak Hour Factor	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	33	28	264	261	20
Total Analysis Volume [veh/h]	33	131	113	1058	1044	79
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

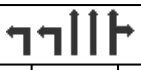
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.20	0.32	0.18	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	38.60	25.88	12.13	0.00	0.00	0.00
Movement LOS	E	D	B	A	A	A
95th-Percentile Queue Length [veh/ln]	2.86	2.86	0.66	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	71.43	71.43	16.62	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	28.44		1.17		0.00	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	2.46					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 3: Clark Avenue at Carson Street

Control Type:	Signalized	Delay (sec / veh):	28.6
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.729

Intersection Setup

Name	Clark Avenue			Clark Avenue			Carson Street			Carson 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	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	Clark Avenue			Clark Avenue			Carson Street			Carson Street		
Base Volume Input [veh/h]	70	326	98	1	34	4	63	679	301	390	840	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	70	326	98	1	34	4	63	679	301	390	840	102
Peak Hour Factor	0.7340	0.7340	0.7340	0.7340	0.7340	0.7340	0.7340	0.7340	0.7340	0.7340	0.7340	0.7340
Other Adjustment Factor	1.0000	1.0000	1.0000	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	111	33	0	12	1	21	231	103	133	286	35
Total Analysis Volume [veh/h]	95	444	134	1	46	5	86	925	410	531	1144	139
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	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	3	8	8	7	4	0	5	2	2	1	6	0
Auxiliary Signal Groups			1,8						2,3			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	10	10	6	10	0	6	10	10	6	10	0
Maximum Green [s]	30	30	30	30	30	0	30	30	30	30	30	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	13	42	42	10	39	0	11	35	35	23	47	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	28	28	0	28	0	0	24	24	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]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No	No	No	No	
Maximum Recall	No	No	No	No	No		No	No	No	No	No	
Pedestrian Recall	No	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	R	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	0.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	29	51	0	20	20	7	46	59	19	58	58
g / C, Green / Cycle	0.08	0.26	0.47	0.00	0.18	0.18	0.06	0.42	0.54	0.17	0.53	0.53
(v / s)_i Volume / Saturation Flow Rate	0.03	0.24	0.05	0.00	0.01	0.01	0.05	0.18	0.26	0.15	0.24	0.24
s, saturation flow rate [veh/h]	3459	1870	2813	3459	1870	1807	1781	5094	1589	3459	3560	1768
c, Capacity [veh/h]	285	487	1315	9	338	327	110	2144	858	589	1885	936
d1, Uniform Delay [s]	47.65	39.47	16.40	54.77	37.45	37.47	50.90	22.55	15.71	44.76	16.05	16.07
k, delay calibration	0.11	0.17	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]	0.68	10.03	0.03	4.90	0.09	0.10	11.21	0.64	1.90	5.36	0.79	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	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	0.91	0.10	0.11	0.08	0.08	0.78	0.43	0.48	0.90	0.45	0.46
d, Delay for Lane Group [s/veh]	48.33	49.49	16.43	59.67	37.55	37.57	62.11	23.19	17.62	50.11	16.84	17.67
Lane Group LOS	D	D	B	E	D	D	E	C	B	D	B	B
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.26	12.84	0.95	0.02	0.58	0.58	2.68	5.70	6.63	7.49	6.67	6.87
50th-Percentile Queue Length [ft/ln]	31.41	321.00	23.74	0.50	14.57	14.54	66.88	142.48	165.63	187.26	166.85	171.66
95th-Percentile Queue Length [veh/ln]	2.26	18.72	1.71	0.04	1.05	1.05	4.82	9.61	10.85	11.98	10.91	11.16
95th-Percentile Queue Length [ft/ln]	56.54	467.92	42.73	0.91	26.23	26.16	120.39	240.35	271.17	299.48	272.77	279.10

Movement, Approach, & Intersection Results

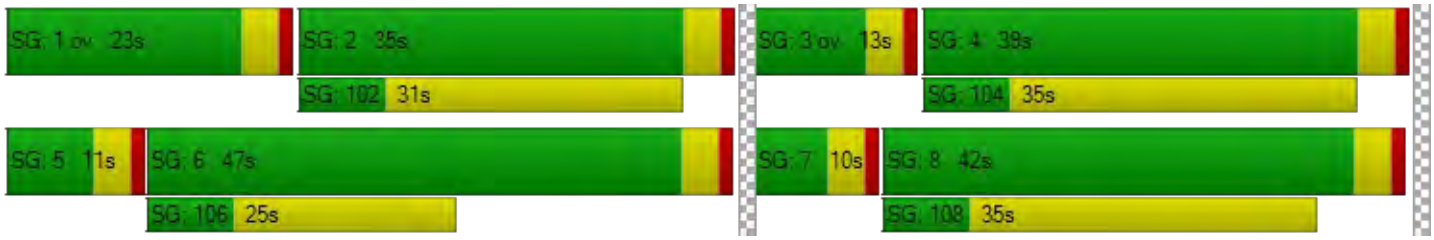
d_M, Delay for Movement [s/veh]	48.33	49.49	16.43	59.67	37.56	37.57	62.11	23.19	17.62	50.11	17.05	17.67
Movement LOS	D	D	B	E	D	D	E	C	B	D	B	B
d_A, Approach Delay [s/veh]	42.75			37.98			23.94			26.78		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	28.62											
Intersection LOS	C											
Intersection V/C	0.729											

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	2.835	2.450	3.060	3.085
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	563	781
d_b, Bicycle Delay [s]	23.59	25.59	28.39	20.43
l_b,int, Bicycle LOS Score for Intersection	2.670	1.603	2.341	2.557
Bicycle LOS	B	A	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 4: Bellflower Boulevard at Carson Street

Control Type:	Signalized	Delay (sec / veh):	37.2
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.705

Intersection Setup

Name	Bellflower Boulevard			Bellflower Boulevard			Carson Street			Carson 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	Bellflower Boulevard			Bellflower Boulevard			Carson Street			Carson Street		
Base Volume Input [veh/h]	104	574	127	211	864	64	128	631	97	160	979	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	104	574	127	211	864	64	128	631	97	160	979	116
Peak Hour Factor	0.9820	0.9820	0.9820	0.9820	0.9820	0.9820	0.9820	0.9820	0.9820	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]	26	146	32	54	220	16	33	161	25	41	249	30
Total Analysis Volume [veh/h]	106	585	129	215	880	65	130	643	99	163	997	118
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	10	0	6	10	0	6	10	0	6	10	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	35	0	20	44	0	13	35	0	15	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	24	0	0	24	0	0	24	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]	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	C	L	C	C
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]	7	22	22	15	30	30	9	41	41	11	43	43
g / C, Green / Cycle	0.07	0.21	0.21	0.14	0.28	0.28	0.09	0.39	0.39	0.11	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.06	0.16	0.08	0.12	0.26	0.26	0.07	0.14	0.14	0.09	0.21	0.21
s, saturation flow rate [veh/h]	1781	3560	1589	1781	1870	1825	1781	3560	1746	1781	3560	1770
c, Capacity [veh/h]	120	762	340	247	533	521	154	1388	680	188	1455	724
d1, Uniform Delay [s]	48.60	38.86	35.34	44.35	36.07	36.08	47.33	22.74	22.78	46.31	23.23	23.24
k, delay calibration	0.11	0.11	0.11	0.11	0.22	0.22	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]	18.11	1.66	0.70	9.14	10.46	10.76	11.78	0.72	1.49	11.49	1.29	2.58
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	0.88	0.77	0.38	0.87	0.90	0.90	0.84	0.36	0.36	0.87	0.51	0.51
d, Delay for Lane Group [s/veh]	66.72	40.52	36.04	53.49	46.53	46.84	59.11	23.46	24.27	57.80	24.52	25.82
Lane Group LOS	E	D	D	D	D	D	E	C	C	E	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.35	7.20	2.88	6.07	13.10	12.84	3.84	4.43	4.55	4.77	7.01	7.24
50th-Percentile Queue Length [ft/ln]	83.70	179.94	72.06	151.77	327.45	321.01	95.99	110.83	113.66	119.18	175.31	181.01
95th-Percentile Queue Length [veh/ln]	6.03	11.60	5.19	10.11	19.03	18.72	6.91	7.89	8.04	8.35	11.36	11.65
95th-Percentile Queue Length [ft/ln]	150.66	289.94	129.71	252.80	475.83	467.93	172.77	197.15	201.08	208.71	283.88	291.34

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	66.72	40.52	36.04	53.49	46.68	46.84	59.11	23.65	24.27	57.80	24.85	25.82
Movement LOS	E	D	D	D	D	D	E	C	C	E	C	C
d_A, Approach Delay [s/veh]	43.20			47.95			29.00			29.14		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	37.19											
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]	42.11	42.11	42.11	42.11
l_p,int, Pedestrian LOS Score for Intersection	2.779	2.696	2.885	2.917
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]	590	761	590	628
d_b, Bicycle Delay [s]	26.10	20.14	26.10	24.71
l_b,int, Bicycle LOS Score for Intersection	2.236	2.517	2.039	2.263
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 5: Clark Avenue at Lew Davis Street

Control Type:	Signalized	Delay (sec / veh):	2.6
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.294

Intersection Setup

Name	Clark Avenue		Clark Avenue		Lew Davis Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	Clark Avenue		Clark Avenue		Lew Davis Street	
Base Volume Input [veh/h]	114	700	494	121	29	9
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	114	700	494	121	29	9
Peak Hour Factor	0.7950	0.7950	0.7950	0.7950	0.7950	0.7950
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	220	155	38	9	3
Total Analysis Volume [veh/h]	143	881	621	152	36	11
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	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	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	0	6	2	0	3	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	0	10	10	0	6	0
Maximum Green [s]	0	30	30	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	1.0	0.0
Split [s]	0	58	58	0	32	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	7	7	0	7	0
Pedestrian Clearance [s]	0	14	14	0	21	0
Delayed Vehicle Green [s]	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	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	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
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	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	C	L	R
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]	2.00	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]	78	78	78	78	4	4
g / C, Green / Cycle	0.86	0.86	0.86	0.86	0.05	0.05
(v / s)_i Volume / Saturation Flow Rate	0.21	0.25	0.21	0.22	0.02	0.01
s, saturation flow rate [veh/h]	697	3560	1870	1749	1781	1589
c, Capacity [veh/h]	633	3076	1616	1511	84	75
d1, Uniform Delay [s]	2.41	1.11	1.05	1.07	41.67	41.11
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.83	0.23	0.35	0.41	3.44	0.89
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	0.23	0.29	0.24	0.26	0.43	0.15
d, Delay for Lane Group [s/veh]	3.24	1.34	1.40	1.48	45.11	42.00
Lane Group LOS	A	A	A	A	D	D
Critical Lane Group	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.55	0.39	0.40	0.42	0.85	0.25
50th-Percentile Queue Length [ft/ln]	13.79	9.85	10.04	10.52	21.24	6.26
95th-Percentile Queue Length [veh/ln]	0.99	0.71	0.72	0.76	1.53	0.45
95th-Percentile Queue Length [ft/ln]	24.82	17.73	18.07	18.93	38.23	11.27

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	3.24	1.34	1.43	1.48	45.11	42.00
Movement LOS	A	A	A	A	D	D
d_A, Approach Delay [s/veh]	1.61		1.44		44.38	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	2.63					
Intersection LOS	A					
Intersection V/C	0.294					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.65	0.00	34.65
l_p,int, Pedestrian LOS Score for Intersection	2.622	0.000	2.254
Crosswalk LOS	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1201	1201	623
d_b, Bicycle Delay [s]	7.19	7.19	21.34
l_b,int, Bicycle LOS Score for Intersection	2.404	2.197	1.560
Bicycle LOS	B	B	A

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 6: Lakewood Boulevard at Conant Street

Control Type:	Signalized	Delay (sec / veh):	20.9
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.619

Intersection Setup

Name	Lakewood Boulevard			Lakewood Boulevard			Conant Street			Conant 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	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	No			Yes			Yes			Yes		

Volumes

Name	Lakewood Boulevard			Lakewood Boulevard			Conant Street			Conant Street		
Base Volume Input [veh/h]	292	1061	219	102	1416	27	4	81	212	33	161	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	292	1061	219	102	1416	27	4	81	212	33	161	75
Peak Hour Factor	0.8580	0.8580	0.8580	0.8580	0.8580	0.8580	0.8580	0.8580	0.8580	0.8580	0.8580	0.8580
Other Adjustment Factor	1.0000	1.0000	1.0000	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	309	64	30	413	8	1	24	62	10	47	22
Total Analysis Volume [veh/h]	340	1237	255	119	1650	31	5	94	247	38	188	87
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	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	6	10	0	0	10	0	6	10	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	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	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	24	46	0	10	32	0	0	29	0	10	39	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	21	0	0	0	0	0	28	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	2.0	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	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	L	C	C	L	C	R	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]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	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	0.00	2.00	2.00
g_i, Effective Green Time [s]	12	56	56	6	50	50	14	14	14	21	21	21
g / C, Green / Cycle	0.12	0.59	0.59	0.06	0.52	0.52	0.14	0.14	0.14	0.23	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.10	0.24	0.16	0.03	0.31	0.31	0.00	0.05	0.09	0.03	0.10	0.05
s, saturation flow rate [veh/h]	3459	5094	1589	3459	3560	1852	1104	1870	2813	1242	1870	1589
c, Capacity [veh/h]	430	2992	934	211	1866	971	110	267	401	342	421	358
d1, Uniform Delay [s]	40.44	10.69	9.64	43.42	15.61	15.62	44.81	36.79	38.31	29.26	31.71	30.18
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	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	1.00	1.00
d2, Incremental Delay [s]	3.31	0.42	0.72	2.37	1.39	2.66	0.17	0.79	1.54	0.14	0.74	0.35
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	0.79	0.41	0.27	0.56	0.59	0.59	0.05	0.35	0.62	0.11	0.45	0.24
d, Delay for Lane Group [s/veh]	43.75	11.11	10.36	45.78	17.00	18.27	44.97	37.58	39.84	29.41	32.45	30.52
Lane Group LOS	D	B	B	D	B	B	D	D	D	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.01	4.48	2.62	1.42	8.13	8.81	0.12	2.01	2.76	0.69	3.75	1.65
50th-Percentile Queue Length [ft/ln]	100.35	112.09	65.57	35.49	203.21	220.14	2.97	50.27	68.90	17.37	93.87	41.24
95th-Percentile Queue Length [veh/ln]	7.23	7.96	4.72	2.56	12.80	13.67	0.21	3.62	4.96	1.25	6.76	2.97
95th-Percentile Queue Length [ft/ln]	180.64	198.90	118.02	63.88	320.10	341.81	5.35	90.49	124.03	31.27	168.96	74.24

Movement, Approach, & Intersection Results

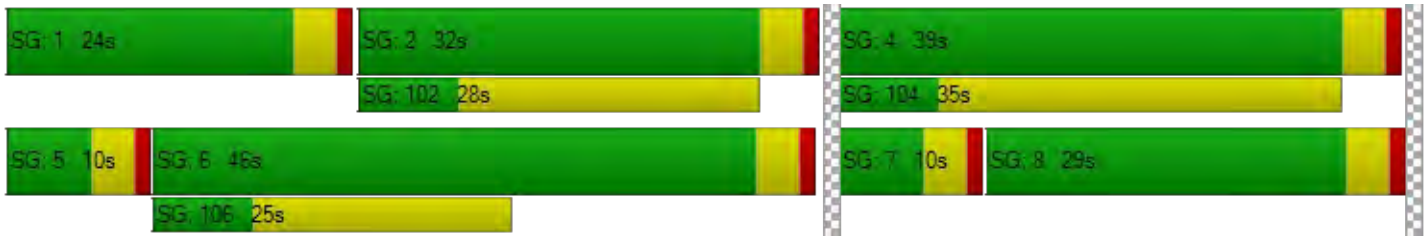
d_M, Delay for Movement [s/veh]	43.75	11.11	10.36	45.78	17.42	18.27	44.97	37.58	39.84	29.41	32.45	30.52
Movement LOS	D	B	B	D	B	B	D	D	D	C	C	C
d_A, Approach Delay [s/veh]	17.06			19.31			39.30			31.55		
Approach LOS	B			B			D			C		
d_I, Intersection Delay [s/veh]	20.86											
Intersection LOS	C											
Intersection V/C	0.619											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	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]	0.00	37.16	37.16	37.16
l_p,int, Pedestrian LOS Score for Intersection	0.000	3.116	2.602	2.454
Crosswalk LOS	F	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	884	589	526	737
d_b, Bicycle Delay [s]	14.80	23.64	25.81	18.96
l_b,int, Bicycle LOS Score for Intersection	2.567	2.550	2.131	2.076
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 7: Faculty Avenue at Conant Street

Control Type:	Signalized	Delay (sec / veh):	2.2
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.247

Intersection Setup

Name	Faculty Avenue		Conant Street		Conant Street	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Faculty Avenue		Conant Street		Conant Street	
Base Volume Input [veh/h]	1	14	223	139	250	29
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	14	223	139	250	29
Peak Hour Factor	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	4	58	36	66	8
Total Analysis Volume [veh/h]	1	15	234	146	262	30
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	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	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	7	0	0	2	6	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	6	0	0	10	10	0
Maximum Green [s]	30	0	0	30	30	0
Amber [s]	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	29	0	0	61	61	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	7	0	0	7	7	0
Pedestrian Clearance [s]	18	0	0	11	11	0
Delayed Vehicle Green [s]	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	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	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
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	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
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	2.00	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]	2	2	80	80	80	80
g / C, Green / Cycle	0.02	0.02	0.89	0.89	0.89	0.89
(v / s)_i Volume / Saturation Flow Rate	0.00	0.01	0.22	0.04	0.08	0.08
s, saturation flow rate [veh/h]	1781	1589	1087	3560	1870	1805
c, Capacity [veh/h]	41	37	1001	3161	1660	1602
d1, Uniform Delay [s]	42.93	43.31	1.33	0.59	0.61	0.61
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]	0.24	7.13	0.55	0.03	0.10	0.11
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	0.02	0.41	0.23	0.05	0.09	0.09
d, Delay for Lane Group [s/veh]	43.16	50.44	1.88	0.62	0.72	0.73
Lane Group LOS	D	D	A	A	A	A
Critical Lane Group	No	Yes	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	0.02	0.40	0.45	0.01	0.05	0.05
50th-Percentile Queue Length [ft/ln]	0.61	9.97	11.31	0.30	1.20	1.25
95th-Percentile Queue Length [veh/ln]	0.04	0.72	0.81	0.02	0.09	0.09
95th-Percentile Queue Length [ft/ln]	1.09	17.95	20.35	0.54	2.17	2.26

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	43.16	50.44	1.88	0.62	0.72	0.73
Movement LOS	D	D	A	A	A	A
d_A, Approach Delay [s/veh]	49.99		1.39		0.72	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	2.24					
Intersection LOS	A					
Intersection V/C	0.247					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.65	34.65	34.65
l_p,int, Pedestrian LOS Score for Intersection	2.364	2.427	2.238
Crosswalk LOS	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	556	1267	1267
d_b, Bicycle Delay [s]	23.45	6.04	6.04
l_b,int, Bicycle LOS Score for Intersection	1.560	1.873	1.801
Bicycle LOS	A	A	A

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 8: Clark Avenue at Conant Street

Control Type:	Signalized	Delay (sec / veh):	9.7
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.461

Intersection Setup

Name	Clark Avenue			Clark Avenue			Conant Street			Conant 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	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			Yes			Yes		

Volumes

Name	Clark Avenue			Clark Avenue			Conant Street			Conant Street		
Base Volume Input [veh/h]	167	712	15	7	422	64	36	17	66	33	77	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	167	712	15	7	422	64	36	17	66	33	77	28
Peak Hour Factor	0.7190	0.7190	0.7190	0.7190	0.7190	0.7190	0.7190	0.7190	0.7190	0.7190	0.7190	0.7190
Other Adjustment Factor	1.0000	1.0000	1.0000	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	248	5	2	147	22	13	6	23	11	27	10
Total Analysis Volume [veh/h]	232	990	21	10	587	89	50	24	92	46	107	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]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	0	10	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	32	0	0	32	0	0	58	0	0	58	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	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	21	0	0	18	0	0	21	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	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	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	C	C	L	C	C	L	C	R	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]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	2.00
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]	70	70	70	70	70	70	12	12	12	12
g / C, Green / Cycle	0.77	0.77	0.77	0.77	0.77	0.77	0.14	0.14	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.30	0.27	0.27	0.02	0.18	0.19	0.04	0.01	0.06	0.12
s, saturation flow rate [veh/h]	763	1870	1856	557	1870	1785	1242	1870	1589	1663
c, Capacity [veh/h]	605	1448	1437	445	1448	1382	91	256	217	277
d1, Uniform Delay [s]	6.26	3.14	3.14	5.46	2.81	2.81	37.11	33.91	35.53	37.73
k, delay calibration	0.50	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]	1.83	0.67	0.67	0.09	0.39	0.41	5.04	0.16	1.31	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
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	0.38	0.35	0.35	0.02	0.24	0.24	0.55	0.09	0.42	0.69
d, Delay for Lane Group [s/veh]	8.09	3.81	3.82	5.56	3.20	3.22	42.15	34.07	36.84	40.83
Lane Group LOS	A	A	A	A	A	A	D	C	D	D
Critical Lane Group	Yes	No	No	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.94	2.19	2.18	0.07	1.33	1.28	1.16	0.47	1.90	4.29
50th-Percentile Queue Length [ft/ln]	48.55	54.80	54.49	1.75	33.15	31.98	29.06	11.63	47.55	107.16
95th-Percentile Queue Length [veh/ln]	3.50	3.95	3.92	0.13	2.39	2.30	2.09	0.84	3.42	7.68
95th-Percentile Queue Length [ft/ln]	87.38	98.63	98.08	3.15	59.66	57.56	52.31	20.93	85.58	192.05

Movement, Approach, & Intersection Results

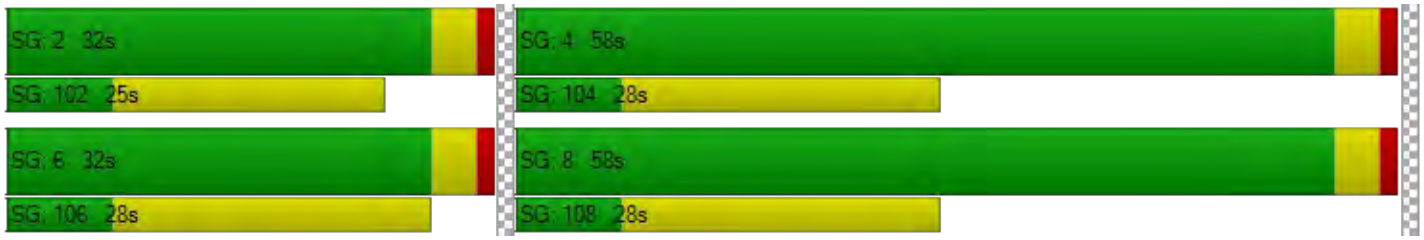
d_M, Delay for Movement [s/veh]	8.09	3.81	3.82	5.56	3.21	3.22	42.15	34.07	36.84	40.83	40.83	40.83
Movement LOS	A	A	A	A	A	A	D	C	D	D	D	D
d_A, Approach Delay [s/veh]	4.61			3.24			38.04			40.83		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	9.67											
Intersection LOS	A											
Intersection V/C	0.461											

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]	34.63	34.63	34.63	34.63
l_p,int, Pedestrian LOS Score for Intersection	2.749	2.715	2.879	2.205
Crosswalk LOS	B	B	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	623	623	1201	1201
d_b, Bicycle Delay [s]	21.32	21.32	7.17	7.17
l_b,int, Bicycle LOS Score for Intersection	2.585	2.126	1.834	1.876
Bicycle LOS	B	B	A	A

Sequence

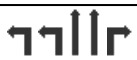
Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 9: Lakewood Boulevard at Wardlow Road

Control Type:	Signalized	Delay (sec / veh):	29.7
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.612

Intersection Setup

Name	Lakewood Boulevard			Lakewood Boulevard			Wardlow Road			Wardlow 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	0	1	0	0	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	Lakewood Boulevard			Lakewood Boulevard			Wardlow Road			Wardlow Road		
Base Volume Input [veh/h]	291	1418	158	190	1258	81	48	24	22	360	89	222
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	291	1418	158	190	1258	81	48	24	22	360	89	222
Peak Hour Factor	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270
Other Adjustment Factor	1.0000	1.0000	1.0000	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	429	48	57	380	24	15	7	7	109	27	67
Total Analysis Volume [veh/h]	352	1715	191	230	1521	98	58	29	27	435	108	268
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	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	10	0	6	10	0	6	10	0	6	10	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	40	0	13	35	0	10	46	0	21	57	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	24	0	0	24	0	0	35	0	0	35	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	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]	14	67	67	9	62	62	5	11	11	17	23	23
g / C, Green / Cycle	0.12	0.56	0.56	0.08	0.52	0.52	0.04	0.09	0.09	0.14	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.10	0.28	0.28	0.07	0.23	0.23	0.02	0.01	0.02	0.13	0.03	0.17
s, saturation flow rate [veh/h]	3459	5094	1749	3459	5094	1796	3459	3560	1589	3459	3560	1589
c, Capacity [veh/h]	405	2843	976	262	2631	928	151	328	146	488	674	301
d1, Uniform Delay [s]	52.09	16.25	16.26	54.95	18.34	18.34	55.85	49.90	50.34	50.67	40.68	47.44
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	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	1.00	1.00
d2, Incremental Delay [s]	5.80	0.63	1.83	9.24	0.57	1.61	1.60	0.12	0.60	5.89	0.11	8.88
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	0.87	0.50	0.50	0.88	0.45	0.45	0.38	0.09	0.18	0.89	0.16	0.89
d, Delay for Lane Group [s/veh]	57.89	16.88	18.08	64.19	18.91	19.94	57.45	50.01	50.94	56.56	40.79	56.32
Lane Group LOS	E	B	B	E	B	B	E	D	D	E	D	E
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	5.53	7.91	8.49	3.78	7.03	7.70	0.89	0.41	0.78	6.81	1.36	8.53
50th-Percentile Queue Length [ft/ln]	138.26	197.75	212.29	94.47	175.66	192.56	22.24	10.15	19.43	170.22	33.88	213.17
95th-Percentile Queue Length [veh/ln]	9.39	12.52	13.27	6.80	11.37	12.25	1.60	0.73	1.40	11.09	2.44	13.32
95th-Percentile Queue Length [ft/ln]	234.68	313.06	331.77	170.04	284.33	306.34	40.02	18.26	34.97	277.21	60.98	332.89

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	57.89	17.08	18.08	64.19	19.13	19.94	57.45	50.01	50.94	56.56	40.79	56.32
Movement LOS	E	B	B	E	B	B	E	D	D	E	D	E
d_A, Approach Delay [s/veh]	23.53			24.78			54.02			54.38		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	29.65											
Intersection LOS	C											
Intersection V/C	0.612											

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	3.394	3.360	2.936	2.783
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]	600	517	700	883
d_b, Bicycle Delay [s]	29.41	33.02	25.36	18.72
l_b,int, Bicycle LOS Score for Intersection	2.491	2.322	1.654	2.229
Bicycle LOS	B	B	A	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 10: Clark Avenue at Wardlow Avenue

Control Type:	Signalized	Delay (sec / veh):	17.7
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.459

Intersection Setup

Name	Clark Avenue			Clark Avenue			Wardlow Avenue			Wardlow Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	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	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			Yes			Yes		

Volumes

Name	Clark Avenue			Clark Avenue			Wardlow Avenue			Wardlow Avenue		
Base Volume Input [veh/h]	50	672	76	66	398	83	62	259	40	87	549	132
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	50	672	76	66	398	83	62	259	40	87	549	132
Peak Hour Factor	0.9280	0.9280	0.9280	0.9280	0.9280	0.9280	0.9280	0.9280	0.9280	0.9280	0.9280	0.9280
Other Adjustment Factor	1.0000	1.0000	1.0000	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	181	20	18	107	22	17	70	11	23	148	36
Total Analysis Volume [veh/h]	54	724	82	71	429	89	67	279	43	94	592	142
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]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	0	10	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	39	0	0	39	0	0	51	0	0	51	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	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	28	0	0	21	0	0	24	0	0	24	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	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	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	C	C	L	C	C	L	C	C	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]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	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	2.00
g_i, Effective Green Time [s]	49	49	49	49	49	49	33	33	33	33	33
g / C, Green / Cycle	0.54	0.54	0.54	0.54	0.54	0.54	0.37	0.37	0.37	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.06	0.15	0.15	0.11	0.10	0.10	0.09	0.09	0.09	0.27	0.26
s, saturation flow rate [veh/h]	883	3560	1775	676	3560	1713	723	1870	1785	1534	1606
c, Capacity [veh/h]	496	1927	960	377	1927	927	167	692	660	617	594
d1, Uniform Delay [s]	13.42	11.16	11.17	15.77	10.50	10.53	38.32	19.57	19.60	24.57	24.17
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	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	1.00
d2, Incremental Delay [s]	0.44	0.36	0.73	1.10	0.20	0.44	1.54	0.17	0.19	1.23	1.55
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	0.11	0.28	0.28	0.19	0.18	0.19	0.40	0.24	0.24	0.66	0.71
d, Delay for Lane Group [s/veh]	13.87	11.52	11.90	16.87	10.70	10.97	39.86	19.75	19.79	25.80	25.72
Lane Group LOS	B	B	B	B	B	B	D	B	B	C	C
Critical Lane Group	No	No	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.66	2.82	2.93	1.00	1.71	1.76	1.48	2.33	2.27	7.46	7.54
50th-Percentile Queue Length [ft/ln]	16.44	70.38	73.32	24.98	42.65	43.93	36.99	58.33	56.73	186.47	188.48
95th-Percentile Queue Length [veh/ln]	1.18	5.07	5.28	1.80	3.07	3.16	2.66	4.20	4.08	11.94	12.04
95th-Percentile Queue Length [ft/ln]	29.58	126.68	131.97	44.96	76.78	79.07	66.58	105.00	102.12	298.45	301.05

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	13.87	11.62	11.90	16.87	10.75	10.97	39.86	19.76	19.79	25.80	25.76	25.72
Movement LOS	B	B	B	B	B	B	D	B	B	C	C	C
d_A, Approach Delay [s/veh]	11.78			11.52			23.23			25.76		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	17.74											
Intersection LOS	B											
Intersection V/C	0.459											

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]	34.67	34.67	34.67	34.67
l_p,int, Pedestrian LOS Score for Intersection	2.926	2.901	2.595	2.539
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	778	778	1044	1044
d_b, Bicycle Delay [s]	16.81	16.81	10.27	10.27
l_b,int, Bicycle LOS Score for Intersection	2.033	1.884	1.881	2.243
Bicycle LOS	B	A	A	B

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 1: Lakewood Boulevard at Carson Street

Control Type:	Signalized	Delay (sec / veh):	35.9
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.581

Intersection Setup

Name	Lakewood Boulevard			Lakewood Boulevard			Carson Street			Carson 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	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	Lakewood Boulevard			Lakewood Boulevard			Carson Street			Carson Street		
Base Volume Input [veh/h]	268	1035	291	79	637	94	328	934	201	219	656	72
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	268	1035	291	79	637	94	328	934	201	219	656	72
Peak Hour Factor	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810
Other Adjustment Factor	1.0000	1.0000	1.0000	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	264	74	20	162	24	84	238	51	56	167	18
Total Analysis Volume [veh/h]	273	1055	297	81	649	96	334	952	205	223	669	73
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	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	1	6	6	5	2	0	3	8	8	7	4	0
Auxiliary Signal Groups			6,7						1,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	10	10	6	10	0	6	10	10	6	10	0
Maximum Green [s]	30	30	30	30	30	0	30	30	30	30	30	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	16	47	47	11	42	0	23	46	46	16	39	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	28	28	0	31	0	0	35	35	0	28	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	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No	No	No	No	
Maximum Recall	No	No	No	No	No		No	No	No	No	No	
Pedestrian Recall	No	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	R	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	0.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	58	74	7	53	53	14	27	43	12	25	25
g / C, Green / Cycle	0.10	0.48	0.62	0.06	0.44	0.44	0.12	0.23	0.36	0.10	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.08	0.21	0.19	0.05	0.11	0.11	0.10	0.19	0.13	0.06	0.14	0.14
s, saturation flow rate [veh/h]	3459	5094	1589	1781	5094	1718	3459	5094	1589	3459	3560	1778
c, Capacity [veh/h]	348	2458	980	104	2242	756	401	1149	571	348	748	374
d1, Uniform Delay [s]	52.73	20.27	10.86	55.79	21.11	21.18	51.94	44.29	28.29	51.92	43.48	43.52
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	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	1.00	1.00
d2, Incremental Delay [s]	3.93	0.55	0.80	12.03	0.26	0.81	4.58	1.61	0.38	1.98	1.00	2.03
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	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	0.30	0.78	0.25	0.25	0.83	0.83	0.36	0.64	0.66	0.66
d, Delay for Lane Group [s/veh]	56.66	20.82	11.66	67.82	21.37	21.98	56.53	45.89	28.67	53.89	44.48	45.55
Lane Group LOS	E	C	B	E	C	C	E	D	C	D	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.21	6.49	3.83	2.77	3.32	3.57	5.17	9.12	4.41	3.33	6.83	6.97
50th-Percentile Queue Length [ft/ln]	105.21	162.20	95.75	69.18	82.89	89.30	129.32	228.10	110.29	83.18	170.75	174.27
95th-Percentile Queue Length [veh/ln]	7.57	10.67	6.89	4.98	5.97	6.43	8.90	14.08	7.86	5.99	11.12	11.30
95th-Percentile Queue Length [ft/ln]	189.31	266.63	172.35	124.52	149.20	160.73	222.56	351.95	196.40	149.72	277.90	282.52

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	56.66	20.82	11.66	67.82	21.46	21.98	56.53	45.89	28.67	53.89	44.76	45.55
Movement LOS	E	C	B	E	C	C	E	D	C	D	D	D
d_A, Approach Delay [s/veh]	25.17			26.07			45.91			46.93		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	35.90											
Intersection LOS	D											
Intersection V/C	0.581											

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	3.244	3.018	3.137	3.019
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	633	700	583
d_b, Bicycle Delay [s]	24.72	28.03	25.36	30.12
l_b,int, Bicycle LOS Score for Intersection	2.453	1.900	2.380	2.090
Bicycle LOS	B	A	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: Faculty Avenue at Carson Street

Control Type:	Two-way stop	Delay (sec / veh):	25.9
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.075

Intersection Setup

Name	Faculty Avenue		Carson Street		Carson Street	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		40.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Faculty Avenue		Carson Street		Carson Street	
Base Volume Input [veh/h]	14	70	93	1197	847	52
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	70	93	1197	847	52
Peak Hour Factor	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	18	24	313	222	14
Total Analysis Volume [veh/h]	15	73	97	1253	887	54
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

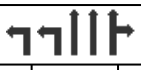
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.16	0.13	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	25.94	15.68	10.74	0.00	0.00	0.00
Movement LOS	D	C	B	A	A	A
95th-Percentile Queue Length [veh/ln]	0.89	0.89	0.46	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	22.28	22.28	11.53	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	17.43		0.77		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	1.08					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 3: Clark Avenue at Carson Street

Control Type:	Signalized	Delay (sec / veh):	30.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.655

Intersection Setup

Name	Clark Avenue			Clark Avenue			Carson Street			Carson 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	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	Clark Avenue			Clark Avenue			Carson Street			Carson Street		
Base Volume Input [veh/h]	129	528	316	85	413	85	97	949	147	112	638	92
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
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	528	316	85	413	85	97	949	147	112	638	92
Peak Hour Factor	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470
Other Adjustment Factor	1.0000	1.0000	1.0000	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	139	83	22	109	22	26	251	39	30	168	24
Total Analysis Volume [veh/h]	136	558	334	90	436	90	102	1002	155	118	674	97
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	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	3	8	8	7	4	0	5	2	2	1	6	0
Auxiliary Signal Groups			1,8						2,3			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	10	10	6	10	0	6	10	10	6	10	0
Maximum Green [s]	30	30	30	30	30	0	30	30	30	30	30	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	11	50	50	10	49	0	13	35	35	10	32	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	28	28	0	28	0	0	24	24	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]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No	No	No	No	
Maximum Recall	No	No	No	No	No		No	No	No	No	No	
Pedestrian Recall	No	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	R	L	C	C
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	0.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	34	44	6	33	33	8	43	54	6	42	42
g / C, Green / Cycle	0.07	0.33	0.42	0.05	0.31	0.31	0.07	0.41	0.52	0.06	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.04	0.30	0.12	0.03	0.14	0.15	0.06	0.20	0.10	0.03	0.14	0.15
s, saturation flow rate [veh/h]	3459	1870	2813	3459	1870	1761	1781	5094	1589	3459	3560	1753
c, Capacity [veh/h]	233	610	1188	187	585	551	129	2086	819	200	1406	692
d1, Uniform Delay [s]	47.58	34.00	19.90	48.30	29.01	29.05	47.94	22.81	13.70	48.29	22.50	22.54
k, delay calibration	0.11	0.23	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]	2.30	11.07	0.13	1.93	0.57	0.61	10.10	0.79	0.51	2.73	0.74	1.52
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	0.58	0.91	0.28	0.48	0.46	0.47	0.79	0.48	0.19	0.59	0.37	0.37
d, Delay for Lane Group [s/veh]	49.88	45.07	20.03	50.23	29.58	29.66	58.04	23.60	14.21	51.03	23.24	24.06
Lane Group LOS	D	D	C	D	C	C	E	C	B	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.80	15.22	2.67	1.19	5.51	5.24	2.98	6.11	2.05	1.58	4.58	4.71
50th-Percentile Queue Length [ft/ln]	44.94	380.51	66.80	29.82	137.73	131.04	74.52	152.70	51.23	39.50	114.61	117.83
95th-Percentile Queue Length [veh/ln]	3.24	21.62	4.81	2.15	9.36	9.00	5.37	10.16	3.69	2.84	8.10	8.27
95th-Percentile Queue Length [ft/ln]	80.89	540.47	120.23	53.68	233.96	224.91	134.13	254.03	92.22	71.10	202.39	206.84

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	49.88	45.07	20.03	50.23	29.61	29.66	58.04	23.60	14.21	51.03	23.43	24.06
Movement LOS	D	D	C	D	C	C	E	C	B	D	C	C
d_A, Approach Delay [s/veh]	37.57			32.63			25.24			27.16		
Approach LOS	D			C			C			C		
d_I, Intersection Delay [s/veh]	30.23											
Intersection LOS	C											
Intersection V/C	0.655											

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	2.843	2.575	2.996	3.015
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]	876	857	590	533
d_b, Bicycle Delay [s]	16.60	17.17	26.10	28.26
l_b,int, Bicycle LOS Score for Intersection	3.256	2.068	2.252	2.049
Bicycle LOS	C	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 4: Bellflower Boulevard at Carson Street

Control Type:	Signalized	Delay (sec / veh):	32.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.759

Intersection Setup

Name	Bellflower Boulevard			Bellflower Boulevard			Carson Street			Carson 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	Bellflower Boulevard			Bellflower Boulevard			Carson Street			Carson Street		
Base Volume Input [veh/h]	131	853	141	104	447	61	156	1095	98	125	661	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	131	853	141	104	447	61	156	1095	98	125	661	143
Peak Hour Factor	0.9360	0.9360	0.9360	0.9360	0.9360	0.9360	0.9360	0.9360	0.9360	0.9360	0.9360	0.9360
Other Adjustment Factor	1.0000	1.0000	1.0000	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	228	38	28	119	16	42	292	26	33	177	38
Total Analysis Volume [veh/h]	140	911	151	111	478	65	167	1170	105	134	706	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]	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	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	10	0	6	10	0	6	10	0	6	10	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	37	0	11	35	0	18	35	0	12	29	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	24	0	0	24	0	0	24	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]	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	C	L	C	C
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]	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	7	25	25	11	37	37	8	34	34
g / C, Green / Cycle	0.10	0.29	0.29	0.07	0.27	0.27	0.11	0.38	0.38	0.08	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.08	0.26	0.09	0.06	0.15	0.15	0.09	0.24	0.24	0.08	0.16	0.16
s, saturation flow rate [veh/h]	1781	3560	1589	1781	1870	1793	1781	3560	1792	1781	3560	1705
c, Capacity [veh/h]	170	1027	459	133	500	480	202	1367	688	151	1264	606
d1, Uniform Delay [s]	42.25	32.37	26.61	43.46	29.96	29.98	41.24	23.71	23.71	43.08	23.63	23.67
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]	9.54	2.81	0.42	12.78	0.96	1.01	8.19	2.13	4.18	15.32	1.20	2.53
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	0.82	0.89	0.33	0.84	0.55	0.56	0.82	0.62	0.62	0.89	0.46	0.46
d, Delay for Lane Group [s/veh]	51.79	35.18	27.03	56.24	30.91	30.99	49.43	25.84	27.89	58.40	24.83	26.20
Lane Group LOS	D	D	C	E	C	C	D	C	C	E	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.64	10.14	2.71	3.02	5.48	5.28	4.25	7.85	8.29	3.73	5.10	5.16
50th-Percentile Queue Length [ft/ln]	91.09	253.39	67.66	75.61	136.89	132.08	106.13	196.23	207.34	93.23	127.41	128.92
95th-Percentile Queue Length [veh/ln]	6.56	15.36	4.87	5.44	9.31	9.05	7.62	12.44	13.02	6.71	8.80	8.88
95th-Percentile Queue Length [ft/ln]	163.96	383.91	121.78	136.10	232.83	226.31	190.61	311.10	325.42	167.82	219.97	222.03

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	51.79	35.18	27.03	56.24	30.94	30.99	49.43	26.40	27.89	58.40	25.07	26.20
Movement LOS	D	D	C	E	C	C	D	C	C	E	C	C
d_A, Approach Delay [s/veh]	36.09			35.24			29.18			29.74		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	32.17											
Intersection LOS	C											
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]	37.18	37.18	37.18	37.18
l_p,int, Pedestrian LOS Score for Intersection	2.767	2.670	2.924	2.934
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]	694	652	652	526
d_b, Bicycle Delay [s]	20.27	21.59	21.59	25.83
l_b,int, Bicycle LOS Score for Intersection	2.551	2.099	2.353	2.106
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 5: Clark Avenue at Lew Davis Street

Control Type:	Signalized	Delay (sec / veh):	8.5
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.477

Intersection Setup

Name	Clark Avenue		Clark Avenue		Lew Davis Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	Clark Avenue		Clark Avenue		Lew Davis Street	
Base Volume Input [veh/h]	23	921	551	45	154	73
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	921	551	45	154	73
Peak Hour Factor	0.7930	0.7930	0.7930	0.7930	0.7930	0.7930
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	290	174	14	49	23
Total Analysis Volume [veh/h]	29	1161	695	57	194	92
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	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	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	0	6	2	0	3	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	0	10	10	0	6	0
Maximum Green [s]	0	30	30	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	1.0	0.0
Split [s]	0	33	33	0	57	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	7	7	0	7	0
Pedestrian Clearance [s]	0	14	14	0	21	0
Delayed Vehicle Green [s]	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	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	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
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	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	C	L	R
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]	2.00	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]	70	70	70	70	12	12
g / C, Green / Cycle	0.78	0.78	0.78	0.78	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.04	0.33	0.20	0.21	0.11	0.06
s, saturation flow rate [veh/h]	711	3560	1870	1821	1781	1589
c, Capacity [veh/h]	566	2762	1450	1413	241	215
d1, Uniform Delay [s]	4.70	3.35	2.83	2.85	37.69	35.65
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.17	0.47	0.43	0.46	6.23	1.35
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	0.05	0.42	0.26	0.27	0.81	0.43
d, Delay for Lane Group [s/veh]	4.88	3.83	3.26	3.31	43.93	36.99
Lane Group LOS	A	A	A	A	D	D
Critical Lane Group	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.18	2.52	1.45	1.47	4.49	1.91
50th-Percentile Queue Length [ft/ln]	4.48	63.05	36.35	36.72	112.28	47.69
95th-Percentile Queue Length [veh/ln]	0.32	4.54	2.62	2.64	7.97	3.43
95th-Percentile Queue Length [ft/ln]	8.06	113.49	65.42	66.10	199.17	85.84

Movement, Approach, & Intersection Results

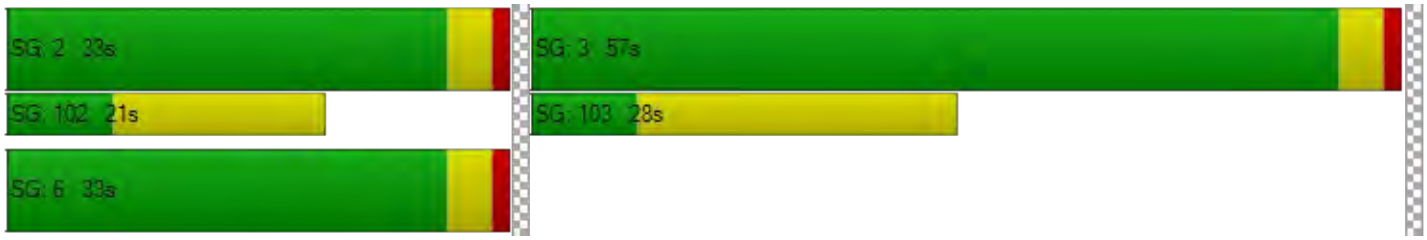
d_M, Delay for Movement [s/veh]	4.88	3.83	3.28	3.31	43.93	36.99
Movement LOS	A	A	A	A	D	D
d_A, Approach Delay [s/veh]	3.85		3.29		41.70	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	8.52					
Intersection LOS	A					
Intersection V/C	0.477					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.63	0.00	34.63
l_p,int, Pedestrian LOS Score for Intersection	2.685	0.000	2.102
Crosswalk LOS	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	645	645	1179
d_b, Bicycle Delay [s]	20.63	20.63	7.58
l_b,int, Bicycle LOS Score for Intersection	2.541	2.180	1.560
Bicycle LOS	B	B	A

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: Lakewood Boulevard at Conant Street

Control Type:	Signalized	Delay (sec / veh):	20.6
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.600

Intersection Setup

Name	Lakewood Boulevard			Lakewood Boulevard			Conant Street			Conant 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	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	No			Yes			Yes			Yes		

Volumes

Name	Lakewood Boulevard			Lakewood Boulevard			Conant Street			Conant Street		
Base Volume Input [veh/h]	146	1316	75	71	1034	7	19	128	348	104	115	84
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	146	1316	75	71	1034	7	19	128	348	104	115	84
Peak Hour Factor	0.9110	0.9110	0.9110	0.9110	0.9110	0.9110	0.9110	0.9110	0.9110	0.9110	0.9110	0.9110
Other Adjustment Factor	1.0000	1.0000	1.0000	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	361	21	19	284	2	5	35	95	29	32	23
Total Analysis Volume [veh/h]	160	1445	82	78	1135	8	21	141	382	114	126	92
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	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	6	10	0	0	10	0	6	10	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	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	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	10	32	0	10	32	0	0	38	0	10	48	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	21	0	0	0	0	0	28	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	2.0	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	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	L	C	C	L	C	R	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]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	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	0.00	2.00	2.00
g_i, Effective Green Time [s]	6	48	48	5	47	47	15	15	15	25	25	25
g / C, Green / Cycle	0.07	0.53	0.53	0.06	0.52	0.52	0.17	0.17	0.17	0.28	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.05	0.28	0.05	0.02	0.21	0.21	0.02	0.08	0.14	0.10	0.07	0.06
s, saturation flow rate [veh/h]	3459	5094	1589	3459	3560	1863	1163	1870	2813	1167	1870	1589
c, Capacity [veh/h]	233	2687	838	202	1846	966	194	316	476	390	526	447
d1, Uniform Delay [s]	41.12	14.06	10.62	40.90	13.25	13.25	37.33	33.66	36.01	25.12	24.99	24.73
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	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	1.00	1.00
d2, Incremental Delay [s]	3.57	0.78	0.23	1.21	0.67	1.27	0.24	0.98	3.21	0.41	0.23	0.23
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	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	0.69	0.54	0.10	0.39	0.41	0.41	0.11	0.45	0.80	0.29	0.24	0.21
d, Delay for Lane Group [s/veh]	44.69	14.83	10.85	42.11	13.91	14.52	37.57	34.65	39.22	25.53	25.22	24.96
Lane Group LOS	D	B	B	D	B	B	D	C	D	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.83	6.18	0.82	0.86	4.51	4.89	0.43	2.82	4.17	1.89	2.08	1.51
50th-Percentile Queue Length [ft/ln]	45.81	154.56	20.61	21.49	112.80	122.13	10.86	70.48	104.31	47.18	51.95	37.63
95th-Percentile Queue Length [veh/ln]	3.30	10.26	1.48	1.55	8.00	8.51	0.78	5.07	7.51	3.40	3.74	2.71
95th-Percentile Queue Length [ft/ln]	82.45	256.51	37.09	38.68	199.90	212.76	19.54	126.87	187.75	84.92	93.51	67.74

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	44.69	14.83	10.85	42.11	14.12	14.52	37.57	34.65	39.22	25.53	25.22	24.96
Movement LOS	D	B	B	D	B	B	D	C	D	C	C	C
d_A, Approach Delay [s/veh]	17.47			15.91			37.97			25.25		
Approach LOS	B			B			D			C		
d_I, Intersection Delay [s/veh]	20.60											
Intersection LOS	C											
Intersection V/C	0.600											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	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]	0.00	34.72	34.72	34.72
l_p,int, Pedestrian LOS Score for Intersection	0.000	3.094	2.589	2.423
Crosswalk LOS	F	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	622	622	755	977
d_b, Bicycle Delay [s]	21.40	21.40	17.46	11.79
l_b,int, Bicycle LOS Score for Intersection	2.487	2.231	2.457	2.107
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 7: Faculty Avenue at Conant Street

Control Type:	Signalized	Delay (sec / veh):	14.4
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.171

Intersection Setup

Name	Faculty Avenue		Conant Street		Conant Street	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Faculty Avenue		Conant Street		Conant Street	
Base Volume Input [veh/h]	21	144	54	196	184	19
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	21	144	54	196	184	19
Peak Hour Factor	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	38	14	52	49	5
Total Analysis Volume [veh/h]	22	154	58	209	196	20
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	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]	8.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	7	0	0	2	6	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	6	0	0	10	10	0
Maximum Green [s]	30	0	0	30	30	0
Amber [s]	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	62	0	0	33	33	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	7	0	0	7	7	0
Pedestrian Clearance [s]	18	0	0	11	11	0
Delayed Vehicle Green [s]	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	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	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
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	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
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	2.00	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]	11	11	76	76	76	76
g / C, Green / Cycle	0.12	0.12	0.80	0.80	0.80	0.80
(v / s)_i Volume / Saturation Flow Rate	0.01	0.10	0.05	0.06	0.06	0.06
s, saturation flow rate [veh/h]	1781	1589	1165	3560	1870	1811
c, Capacity [veh/h]	212	189	951	2836	1490	1443
d1, Uniform Delay [s]	37.25	40.74	3.08	2.08	2.08	2.08
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]	0.21	8.22	0.12	0.05	0.09	0.10
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	0.10	0.81	0.06	0.07	0.07	0.07
d, Delay for Lane Group [s/veh]	37.46	48.95	3.21	2.13	2.17	2.19
Lane Group LOS	D	D	A	A	A	A
Critical Lane Group	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.47	3.90	0.26	0.29	0.32	0.32
50th-Percentile Queue Length [ft/ln]	11.64	97.49	6.41	7.37	8.07	8.12
95th-Percentile Queue Length [veh/ln]	0.84	7.02	0.46	0.53	0.58	0.58
95th-Percentile Queue Length [ft/ln]	20.95	175.49	11.54	13.26	14.53	14.61

Movement, Approach, & Intersection Results

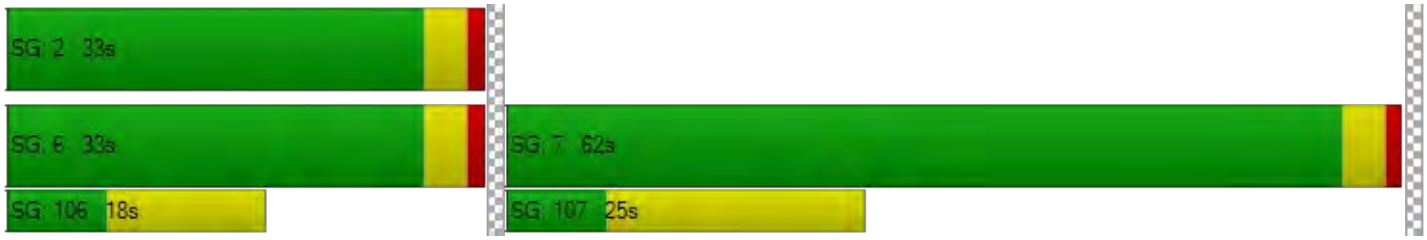
d_M, Delay for Movement [s/veh]	37.46	48.95	3.21	2.13	2.18	2.19
Movement LOS	D	D	A	A	A	A
d_A, Approach Delay [s/veh]	47.52		2.37		2.18	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	14.36					
Intersection LOS	B					
Intersection V/C	0.171					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	37.08	37.08	37.08
l_p,int, Pedestrian LOS Score for Intersection	2.107	2.422	2.242
Crosswalk LOS	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1222	611	611
d_b, Bicycle Delay [s]	7.17	22.88	22.88
l_b,int, Bicycle LOS Score for Intersection	1.560	1.780	1.738
Bicycle LOS	A	A	A

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 8: Clark Avenue at Conant Street

Control Type:	Signalized	Delay (sec / veh):	10.3
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.440

Intersection Setup

Name	Clark Avenue			Clark Avenue			Conant Street			Conant 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	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			Yes			Yes		

Volumes

Name	Clark Avenue			Clark Avenue			Conant Street			Conant Street		
Base Volume Input [veh/h]	109	818	46	24	514	37	59	66	144	15	34	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	109	818	46	24	514	37	59	66	144	15	34	19
Peak Hour Factor	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070
Other Adjustment Factor	1.0000	1.0000	1.0000	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	253	14	7	159	11	18	20	45	5	11	6
Total Analysis Volume [veh/h]	135	1014	57	30	637	46	73	82	178	19	42	24
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]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	0	10	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	32	0	0	32	0	0	58	0	0	58	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	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	21	0	0	18	0	0	21	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	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	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	C	C	L	C	C	L	C	R	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]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	2.00
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]	69	69	69	69	69	69	13	13	13	13
g / C, Green / Cycle	0.77	0.77	0.77	0.77	0.77	0.77	0.14	0.14	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.18	0.29	0.29	0.06	0.18	0.18	0.05	0.04	0.11	0.05
s, saturation flow rate [veh/h]	758	1870	1835	527	1870	1826	1335	1870	1589	1653
c, Capacity [veh/h]	599	1442	1415	418	1442	1408	185	261	222	280
d1, Uniform Delay [s]	5.43	3.31	3.31	6.11	2.88	2.88	36.06	34.76	37.43	34.90
k, delay calibration	0.50	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]	0.87	0.75	0.76	0.33	0.39	0.40	1.37	0.68	6.58	0.60
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
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	0.23	0.37	0.38	0.07	0.24	0.24	0.40	0.31	0.80	0.30
d, Delay for Lane Group [s/veh]	6.30	4.05	4.07	6.44	3.28	3.29	37.43	35.44	44.01	35.51
Lane Group LOS	A	A	A	A	A	A	D	D	D	D
Critical Lane Group	No	No	Yes	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.96	2.45	2.41	0.23	1.36	1.33	1.54	1.64	4.13	1.71
50th-Percentile Queue Length [ft/ln]	24.10	61.20	60.29	5.78	33.88	33.24	38.58	41.11	103.36	42.68
95th-Percentile Queue Length [veh/ln]	1.73	4.41	4.34	0.42	2.44	2.39	2.78	2.96	7.44	3.07
95th-Percentile Queue Length [ft/ln]	43.37	110.15	108.52	10.41	60.98	59.84	69.44	74.00	186.05	76.83

Movement, Approach, & Intersection Results

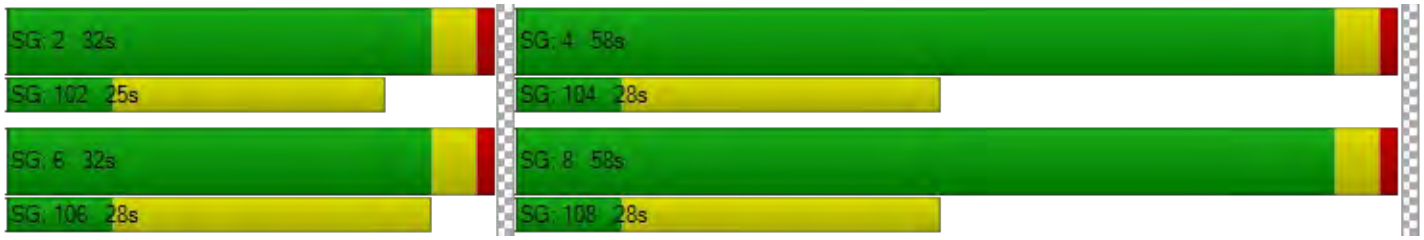
d_M, Delay for Movement [s/veh]	6.30	4.06	4.07	6.44	3.28	3.29	37.43	35.44	44.01	35.51	35.51	35.51
Movement LOS	A	A	A	A	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	4.31			3.41			40.46			35.51		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	10.32											
Intersection LOS	B											
Intersection V/C	0.440											

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]	34.63	34.63	34.63	34.63
l_p,int, Pedestrian LOS Score for Intersection	2.724	2.759	2.735	2.235
Crosswalk LOS	B	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	623	623	1201	1201
d_b, Bicycle Delay [s]	21.32	21.32	7.17	7.17
l_b,int, Bicycle LOS Score for Intersection	2.555	2.148	2.109	1.700
Bicycle LOS	B	B	B	A

Sequence

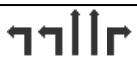
Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 9: Lakewood Boulevard at Wardlow Road

Control Type:	Signalized	Delay (sec / veh):	20.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.512

Intersection Setup

Name	Lakewood Boulevard			Lakewood Boulevard			Wardlow Road			Wardlow 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	0	1	0	0	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	Lakewood Boulevard			Lakewood Boulevard			Wardlow Road			Wardlow Road		
Base Volume Input [veh/h]	164	1384	272	210	1186	58	64	58	36	144	69	130
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	164	1384	272	210	1186	58	64	58	36	144	69	130
Peak Hour Factor	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340
Other Adjustment Factor	1.0000	1.0000	1.0000	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	370	73	56	317	16	17	16	10	39	18	35
Total Analysis Volume [veh/h]	176	1482	291	225	1270	62	69	62	39	154	74	139
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	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	10	0	6	10	0	6	10	0	6	10	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	35	0	13	36	0	10	46	0	11	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	24	0	0	24	0	0	35	0	0	35	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	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]	7	64	64	9	65	65	5	10	10	7	11	11
g / C, Green / Cycle	0.07	0.60	0.60	0.08	0.62	0.62	0.05	0.10	0.10	0.06	0.11	0.11
(v / s)_i Volume / Saturation Flow Rate	0.05	0.26	0.26	0.07	0.19	0.19	0.02	0.02	0.02	0.04	0.02	0.09
s, saturation flow rate [veh/h]	3459	5094	1674	3459	5094	1813	3459	3560	1589	3459	3560	1589
c, Capacity [veh/h]	241	3075	1011	290	3147	1120	175	346	154	218	391	174
d1, Uniform Delay [s]	47.92	11.18	11.18	47.19	9.51	9.52	48.35	43.60	43.92	48.29	42.54	45.65
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	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	1.00	1.00
d2, Incremental Delay [s]	4.20	0.45	1.36	4.47	0.26	0.73	1.45	0.25	0.85	4.14	0.23	8.03
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	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	0.73	0.43	0.43	0.78	0.31	0.31	0.40	0.18	0.25	0.71	0.19	0.80
d, Delay for Lane Group [s/veh]	52.12	11.63	12.54	51.66	9.77	10.24	49.80	43.85	44.77	52.43	42.77	53.68
Lane Group LOS	D	B	B	D	A	B	D	D	D	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.39	5.34	5.52	3.05	3.42	3.80	0.91	0.75	0.97	2.10	0.89	3.91
50th-Percentile Queue Length [ft/ln]	59.79	133.45	137.95	76.29	85.38	94.96	22.74	18.81	24.37	52.44	22.14	97.72
95th-Percentile Queue Length [veh/ln]	4.30	9.13	9.37	5.49	6.15	6.84	1.64	1.35	1.75	3.78	1.59	7.04
95th-Percentile Queue Length [ft/ln]	107.62	228.17	234.26	137.32	153.68	170.93	40.93	33.86	43.87	94.40	39.86	175.90

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	52.12	11.72	12.54	51.66	9.88	10.24	49.80	43.85	44.77	52.43	42.77	53.68
Movement LOS	D	B	B	D	A	B	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	15.49			15.93			46.47			50.96		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	20.18											
Intersection LOS	C											
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]	42.11	42.11	42.11	42.11
l_p,int, Pedestrian LOS Score for Intersection	3.306	3.290	2.909	2.733
Crosswalk LOS	C	C	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	590	609	800	819
d_b, Bicycle Delay [s]	26.10	25.40	18.93	18.33
l_b,int, Bicycle LOS Score for Intersection	2.364	2.202	1.700	1.862
Bicycle LOS	B	B	A	A

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 10: Clark Avenue at Wardlow Avenue

Control Type:	Signalized	Delay (sec / veh):	15.4
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.328

Intersection Setup

Name	Clark Avenue			Clark Avenue			Wardlow Avenue			Wardlow Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	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	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			Yes			Yes		

Volumes

Name	Clark Avenue			Clark Avenue			Wardlow Avenue			Wardlow Avenue		
Base Volume Input [veh/h]	35	797	102	97	507	53	111	415	36	34	251	67
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
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	797	102	97	507	53	111	415	36	34	251	67
Peak Hour Factor	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770
Other Adjustment Factor	1.0000	1.0000	1.0000	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	204	26	25	130	14	28	106	9	9	64	17
Total Analysis Volume [veh/h]	36	816	104	99	519	54	114	425	37	35	257	69
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]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	0	10	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	50	0	0	50	0	0	40	0	0	40	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	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	28	0	0	21	0	0	24	0	0	24	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	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	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	C	C	L	C	C	L	C	C	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]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	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	2.00
g_i, Effective Green Time [s]	59	59	59	59	59	59	23	23	23	23	23
g / C, Green / Cycle	0.65	0.65	0.65	0.65	0.65	0.65	0.26	0.26	0.26	0.26	0.26
(v / s)_i Volume / Saturation Flow Rate	0.04	0.17	0.17	0.16	0.11	0.11	0.11	0.12	0.13	0.12	0.12
s, saturation flow rate [veh/h]	839	3560	1764	607	3560	1782	1054	1870	1818	1396	1599
c, Capacity [veh/h]	569	2320	1150	415	2320	1161	230	485	472	410	415
d1, Uniform Delay [s]	8.19	6.60	6.61	10.83	6.11	6.12	37.11	28.20	28.22	27.27	27.98
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	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	1.00
d2, Incremental Delay [s]	0.21	0.28	0.57	1.36	0.15	0.31	1.65	0.74	0.77	0.68	0.78
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	0.06	0.26	0.27	0.24	0.16	0.17	0.50	0.48	0.48	0.42	0.46
d, Delay for Lane Group [s/veh]	8.40	6.88	7.18	12.19	6.27	6.43	38.76	28.94	28.99	27.95	28.76
Lane Group LOS	A	A	A	B	A	A	D	C	C	C	C
Critical Lane Group	No	No	Yes	No	No	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.32	2.24	2.33	1.14	1.28	1.36	2.48	4.28	4.19	3.04	3.44
50th-Percentile Queue Length [ft/ln]	7.92	56.06	58.30	28.50	32.10	33.88	62.00	107.00	104.65	76.09	86.06
95th-Percentile Queue Length [veh/ln]	0.57	4.04	4.20	2.05	2.31	2.44	4.46	7.67	7.54	5.48	6.20
95th-Percentile Queue Length [ft/ln]	14.26	100.91	104.94	51.29	57.79	60.98	111.59	191.82	188.38	136.96	154.91

Movement, Approach, & Intersection Results

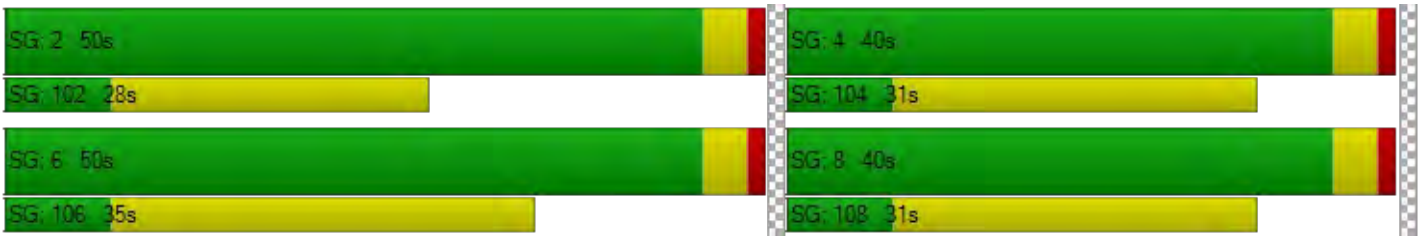
d_M, Delay for Movement [s/veh]	8.40	6.95	7.18	12.19	6.31	6.43	38.76	28.96	28.99	27.95	28.33	28.76
Movement LOS	A	A	A	B	A	A	D	C	C	C	C	C
d_A, Approach Delay [s/veh]	7.03			7.19			30.90			28.38		
Approach LOS	A			A			C			C		
d_I, Intersection Delay [s/veh]	15.44											
Intersection LOS	B											
Intersection V/C	0.328											

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]	34.67	34.67	34.67	34.67
l_p,int, Pedestrian LOS Score for Intersection	2.859	2.988	2.531	2.512
Crosswalk LOS	C	C	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	1022	800	800
d_b, Bicycle Delay [s]	10.76	10.76	16.20	16.20
l_b,int, Bicycle LOS Score for Intersection	2.085	1.929	2.035	1.857
Bicycle LOS	B	A	B	A

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



APPENDIX B-III

YEAR 2029 CUMULATIVE TRAFFIC CONDITIONS

Intersection Level Of Service Report
Intersection 1: Lakewood Boulevard at Carson Street

Control Type:	Signalized	Delay (sec / veh):	35.3
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.667

Intersection Setup

Name	Lakewood Boulevard			Lakewood Boulevard			Carson Street			Carson 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	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	Lakewood Boulevard			Lakewood Boulevard			Carson Street			Carson Street		
Base Volume Input [veh/h]	194	533	176	156	1405	192	93	895	226	299	765	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
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	533	176	156	1405	192	93	895	226	299	765	28
Peak Hour Factor	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560
Other Adjustment Factor	1.0000	1.0000	1.0000	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	139	46	41	367	50	24	234	59	78	200	7
Total Analysis Volume [veh/h]	203	558	184	163	1470	201	97	936	236	313	800	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	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	1	6	6	5	2	0	3	8	8	7	4	0
Auxiliary Signal Groups			6,7						1,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	10	10	6	10	0	6	10	10	6	10	0
Maximum Green [s]	30	30	30	30	30	0	30	30	30	30	30	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	12	39	39	18	45	0	11	46	46	17	52	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	28	28	0	31	0	0	35	35	0	28	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	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No	No	No	No	
Maximum Recall	No	No	No	No	No		No	No	No	No	No	
Pedestrian Recall	No	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	R	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	0.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	52	68	13	56	56	6	27	39	13	34	34
g / C, Green / Cycle	0.07	0.43	0.57	0.11	0.47	0.47	0.05	0.22	0.32	0.11	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.06	0.11	0.12	0.09	0.25	0.25	0.03	0.18	0.15	0.09	0.15	0.15
s, saturation flow rate [veh/h]	3459	5094	1589	1781	5094	1725	3459	5094	1589	3459	3560	1837
c, Capacity [veh/h]	233	2191	906	191	2393	811	169	1135	514	369	999	516
d1, Uniform Delay [s]	55.47	21.89	12.55	52.69	22.35	22.35	55.88	44.41	32.26	52.68	36.69	36.70
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.15	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	1.00	1.00
d2, Incremental Delay [s]	9.70	0.28	0.51	10.38	0.82	2.39	3.06	1.58	0.90	5.47	0.47	0.91
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	0.87	0.25	0.20	0.86	0.52	0.52	0.57	0.82	0.46	0.85	0.55	0.55
d, Delay for Lane Group [s/veh]	65.17	22.17	13.05	63.07	23.16	24.74	58.94	45.99	33.16	58.15	37.16	37.61
Lane Group LOS	E	C	B	E	C	C	E	D	C	E	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.36	3.42	2.51	5.38	8.32	8.81	1.51	8.97	5.58	4.91	6.88	7.17
50th-Percentile Queue Length [ft/ln]	83.93	85.48	62.69	134.39	208.02	220.32	37.78	224.21	139.61	122.77	171.96	179.16
95th-Percentile Queue Length [veh/ln]	6.04	6.15	4.51	9.18	13.05	13.68	2.72	13.88	9.46	8.55	11.18	11.56
95th-Percentile Queue Length [ft/ln]	151.07	153.87	112.84	229.45	326.29	342.03	68.00	346.99	236.50	213.63	279.48	288.92

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	65.17	22.17	13.05	63.07	23.40	24.74	58.94	45.99	33.16	58.15	37.30	37.61
Movement LOS	E	C	B	E	C	C	E	D	C	E	D	D
d_A, Approach Delay [s/veh]	29.63			27.08			44.59			43.02		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	35.33											
Intersection LOS	D											
Intersection V/C	0.667											

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	3.269	3.046	3.131	3.035
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	700	800
d_b, Bicycle Delay [s]	30.12	26.02	25.36	21.61
l_b,int, Bicycle LOS Score for Intersection	2.079	2.316	2.258	2.188
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: Faculty Avenue at Carson Street

Control Type:	Two-way stop	Delay (sec / veh):	45.0
Analysis Method:	HCM 7th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.231

Intersection Setup

Name	Faculty Avenue		Carson Street		Carson Street	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		40.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Faculty Avenue		Carson Street		Carson Street	
Base Volume Input [veh/h]	32	126	108	1017	1007	76
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	32	126	108	1017	1007	76
Peak Hour Factor	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	34	30	278	275	21
Total Analysis Volume [veh/h]	35	138	118	1113	1102	83
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

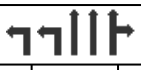
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.23	0.36	0.20	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	44.95	30.55	12.70	0.00	0.00	0.00
Movement LOS	E	D	B	A	A	A
95th-Percentile Queue Length [veh/ln]	3.50	3.50	0.75	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	87.42	87.42	18.71	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	33.47		1.22		0.00	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	2.82					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 3: Clark Avenue at Carson Street

Control Type:	Signalized	Delay (sec / veh):	29.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.759

Intersection Setup

Name	Clark Avenue			Clark Avenue			Carson Street			Carson 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	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	Clark Avenue			Clark Avenue			Carson Street			Carson Street		
Base Volume Input [veh/h]	72	341	101	1	34	4	66	717	314	399	888	107
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	72	341	101	1	34	4	66	717	314	399	888	107
Peak Hour Factor	0.7340	0.7340	0.7340	0.7340	0.7340	0.7340	0.7340	0.7340	0.7340	0.7340	0.7340	0.7340
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	116	34	0	12	1	22	244	107	136	302	36
Total Analysis Volume [veh/h]	98	465	138	1	46	5	90	977	428	544	1210	146
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	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	3	8	8	7	4	0	5	2	2	1	6	0
Auxiliary Signal Groups			1,8						2,3			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	10	10	6	10	0	6	10	10	6	10	0
Maximum Green [s]	30	30	30	30	30	0	30	30	30	30	30	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	13	42	42	10	39	0	11	35	35	23	47	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	28	28	0	28	0	0	24	24	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]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No	No	No	No	
Maximum Recall	No	No	No	No	No		No	No	No	No	No	
Pedestrian Recall	No	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	R	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	0.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	30	53	0	21	21	7	45	58	19	57	57
g / C, Green / Cycle	0.08	0.27	0.48	0.00	0.19	0.19	0.06	0.41	0.53	0.17	0.52	0.52
(v / s)_i Volume / Saturation Flow Rate	0.03	0.25	0.05	0.00	0.01	0.01	0.05	0.19	0.27	0.16	0.25	0.26
s, saturation flow rate [veh/h]	3459	1870	2813	3459	1870	1807	1781	5094	1589	3459	3560	1769
c, Capacity [veh/h]	285	508	1353	9	359	347	115	2075	836	598	1837	913
d1, Uniform Delay [s]	47.69	38.87	15.59	54.77	36.45	36.46	50.75	23.93	16.92	44.68	17.30	17.32
k, delay calibration	0.11	0.19	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]	0.71	11.08	0.03	4.90	0.08	0.09	11.10	0.77	2.23	5.72	0.95	1.92
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	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	0.34	0.92	0.10	0.11	0.07	0.07	0.78	0.47	0.51	0.91	0.49	0.49
d, Delay for Lane Group [s/veh]	48.41	49.95	15.63	59.67	36.53	36.55	61.85	24.70	19.15	50.41	18.24	19.24
Lane Group LOS	D	D	B	E	D	D	E	C	B	D	B	B
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.30	13.56	0.95	0.02	0.57	0.57	2.79	6.28	7.31	7.71	7.45	7.69
50th-Percentile Queue Length [ft/ln]	32.44	338.97	23.71	0.50	14.34	14.30	69.81	156.97	182.72	192.66	186.20	192.36
95th-Percentile Queue Length [veh/ln]	2.34	19.60	1.71	0.04	1.03	1.03	5.03	10.39	11.74	12.26	11.92	12.24
95th-Percentile Queue Length [ft/ln]	58.40	489.94	42.68	0.91	25.81	25.74	125.65	259.70	293.56	306.47	298.10	306.09

Movement, Approach, & Intersection Results

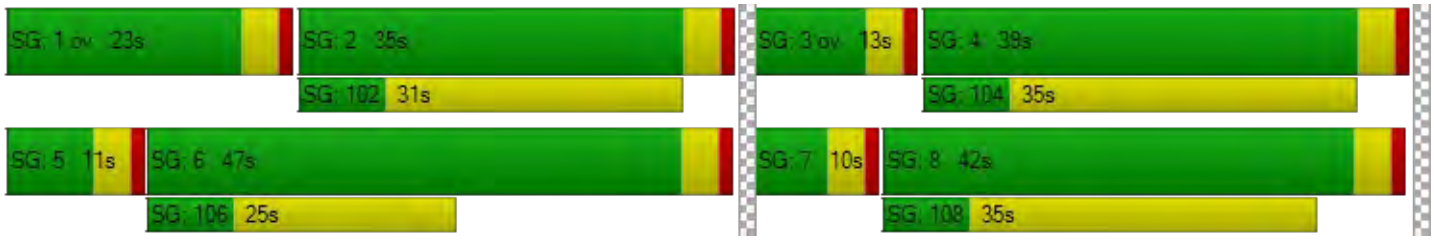
d_M, Delay for Movement [s/veh]	48.41	49.95	15.63	59.67	36.54	36.55	61.85	24.70	19.15	50.41	18.49	19.24
Movement LOS	D	D	B	E	D	D	E	C	B	D	B	B
d_A, Approach Delay [s/veh]	42.98			36.99			25.34			27.69		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	29.54											
Intersection LOS	C											
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]	44.58	44.58	44.58	44.58
l_p,int, Pedestrian LOS Score for Intersection	2.843	2.456	3.077	3.103
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	563	781
d_b, Bicycle Delay [s]	23.59	25.59	28.39	20.43
l_b,int, Bicycle LOS Score for Intersection	2.716	1.603	2.382	2.605
Bicycle LOS	B	A	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 4: Bellflower Boulevard at Carson Street

Control Type:	Signalized	Delay (sec / veh):	39.2
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.730

Intersection Setup

Name	Bellflower Boulevard			Bellflower Boulevard			Carson Street			Carson 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	Bellflower Boulevard			Bellflower Boulevard			Carson Street			Carson Street		
Base Volume Input [veh/h]	109	603	133	222	907	63	133	663	102	168	1022	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	109	603	133	222	907	63	133	663	102	168	1022	122
Peak Hour Factor	0.9820	0.9820	0.9820	0.9820	0.9820	0.9820	0.9820	0.9820	0.9820	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]	28	154	34	57	231	16	34	169	26	43	260	31
Total Analysis Volume [veh/h]	111	614	135	226	924	64	135	675	104	171	1041	124
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	10	0	6	10	0	6	10	0	6	10	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	35	0	24	47	0	14	35	0	16	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	24	0	0	24	0	0	24	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]	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	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]	8	25	25	16	33	33	10	41	41	12	43	43
g / C, Green / Cycle	0.07	0.22	0.22	0.14	0.30	0.30	0.09	0.38	0.38	0.11	0.39	0.39
(v / s)_i Volume / Saturation Flow Rate	0.06	0.17	0.08	0.13	0.27	0.27	0.08	0.15	0.15	0.10	0.22	0.22
s, saturation flow rate [veh/h]	1781	3560	1589	1781	1870	1828	1781	3560	1746	1781	3560	1770
c, Capacity [veh/h]	131	799	357	258	553	541	163	1338	656	195	1402	697
d1, Uniform Delay [s]	50.40	40.02	36.19	46.10	37.24	37.26	49.16	25.13	25.17	48.28	25.88	25.89
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]	13.86	1.59	0.66	9.13	11.07	11.42	10.16	0.86	1.77	11.63	1.59	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	0.77	0.38	0.88	0.90	0.90	0.83	0.39	0.39	0.88	0.55	0.56
d, Delay for Lane Group [s/veh]	64.26	41.61	36.85	55.23	48.31	48.68	59.32	25.99	26.94	59.91	27.47	29.06
Lane Group LOS	E	D	D	E	D	D	E	C	C	E	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.52	7.91	3.14	6.68	14.40	14.15	4.10	5.10	5.22	5.24	8.09	8.35
50th-Percentile Queue Length [ft/ln]	87.91	197.63	78.48	166.91	360.07	353.84	102.42	127.41	130.42	130.89	202.15	208.74
95th-Percentile Queue Length [veh/ln]	6.33	12.52	5.65	10.91	20.63	20.32	7.37	8.80	8.96	8.99	12.75	13.09
95th-Percentile Queue Length [ft/ln]	158.23	312.91	141.26	272.85	515.67	508.09	184.36	219.97	224.07	224.70	318.74	327.22

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	64.26	41.61	36.85	55.23	48.48	48.68	59.32	26.20	26.94	59.91	27.87	29.06
Movement LOS	E	D	D	E	D	D	E	C	C	E	C	C
d_A, Approach Delay [s/veh]	43.79			49.74			31.18			32.08		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	39.18											
Intersection LOS	D											
Intersection V/C	0.730											

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	2.797	2.716	2.900	2.934
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]	563	781	563	600
d_b, Bicycle Delay [s]	28.39	20.43	28.39	26.97
l_b,int, Bicycle LOS Score for Intersection	2.269	2.561	2.062	2.294
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 5: Clark Avenue at Lew Davis Street

Control Type:	Signalized	Delay (sec / veh):	2.6
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.306

Intersection Setup

Name	Clark Avenue		Clark Avenue		Lew Davis Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	Clark Avenue		Clark Avenue		Lew Davis Street	
Base Volume Input [veh/h]	120	734	513	117	28	9
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	120	734	513	117	28	9
Peak Hour Factor	0.7950	0.7950	0.7950	0.7950	0.7950	0.7950
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	38	231	161	37	9	3
Total Analysis Volume [veh/h]	151	923	645	147	35	11
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	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	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	0	6	2	0	3	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	0	10	10	0	6	0
Maximum Green [s]	0	30	30	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	1.0	0.0
Split [s]	0	58	58	0	32	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	7	7	0	7	0
Pedestrian Clearance [s]	0	14	14	0	21	0
Delayed Vehicle Green [s]	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	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	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
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	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	C	L	R
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]	2.00	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]	78	78	78	78	4	4
g / C, Green / Cycle	0.87	0.87	0.87	0.87	0.05	0.05
(v / s)_i Volume / Saturation Flow Rate	0.22	0.26	0.21	0.23	0.02	0.01
s, saturation flow rate [veh/h]	685	3560	1870	1755	1781	1589
c, Capacity [veh/h]	623	3078	1617	1517	83	74
d1, Uniform Delay [s]	2.47	1.11	1.05	1.07	41.69	41.15
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.92	0.25	0.36	0.42	3.38	0.92
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	0.24	0.30	0.24	0.26	0.42	0.15
d, Delay for Lane Group [s/veh]	3.39	1.37	1.41	1.49	45.07	42.07
Lane Group LOS	A	A	A	A	D	D
Critical Lane Group	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.60	0.41	0.41	0.43	0.83	0.25
50th-Percentile Queue Length [ft/ln]	14.97	10.29	10.19	10.66	20.65	6.27
95th-Percentile Queue Length [veh/ln]	1.08	0.74	0.73	0.77	1.49	0.45
95th-Percentile Queue Length [ft/ln]	26.95	18.51	18.34	19.18	37.17	11.29

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	3.39	1.37	1.44	1.49	45.07	42.07
Movement LOS	A	A	A	A	D	D
d_A, Approach Delay [s/veh]	1.65		1.45		44.35	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	2.59					
Intersection LOS	A					
Intersection V/C	0.306					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.65	0.00	34.65
l_p,int, Pedestrian LOS Score for Intersection	2.637	0.000	2.266
Crosswalk LOS	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1201	1201	623
d_b, Bicycle Delay [s]	7.19	7.19	21.34
l_b,int, Bicycle LOS Score for Intersection	2.446	2.213	1.560
Bicycle LOS	B	B	A

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 6: Lakewood Boulevard at Conant Street

Control Type:	Signalized	Delay (sec / veh):	24.8
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.721

Intersection Setup

Name	Lakewood Boulevard			Lakewood Boulevard			Conant Street			Conant 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	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	No			Yes			Yes			Yes		

Volumes

Name	Lakewood Boulevard			Lakewood Boulevard			Conant Street			Conant Street		
Base Volume Input [veh/h]	406	1129	223	93	1494	127	17	85	236	33	169	79
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	406	1129	223	93	1494	127	17	85	236	33	169	79
Peak Hour Factor	0.8580	0.8580	0.8580	0.8580	0.8580	0.8580	0.8580	0.8580	0.8580	0.8580	0.8580	0.8580
Other Adjustment Factor	1.0000	1.0000	1.0000	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	329	65	27	435	37	5	25	69	10	49	23
Total Analysis Volume [veh/h]	473	1316	260	108	1741	148	20	99	275	38	197	92
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	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	6	10	0	0	10	0	6	10	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	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	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	29	51	0	10	32	0	0	22	0	17	39	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	21	0	0	0	0	0	28	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	2.0	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	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	L	C	C	L	C	R	L	C	R
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	2.00	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	0.00	2.00	2.00
g_i, Effective Green Time [s]	16	59	59	6	48	48	16	16	16	24	24	24
g / C, Green / Cycle	0.16	0.58	0.58	0.06	0.48	0.48	0.16	0.16	0.16	0.24	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.14	0.26	0.16	0.03	0.35	0.35	0.02	0.05	0.10	0.03	0.11	0.06
s, saturation flow rate [veh/h]	3459	5094	1589	3459	3560	1796	1090	1870	2813	1204	1870	1589
c, Capacity [veh/h]	567	2974	928	200	1701	858	122	296	445	344	446	379
d1, Uniform Delay [s]	40.53	11.69	10.37	45.87	21.07	21.13	46.43	37.48	39.34	29.81	32.47	30.83
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	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	1.00	1.00
d2, Incremental Delay [s]	3.29	0.48	0.75	2.24	2.89	5.71	0.62	0.66	1.41	0.14	0.69	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	0.83	0.44	0.28	0.54	0.74	0.74	0.16	0.33	0.62	0.11	0.44	0.24
d, Delay for Lane Group [s/veh]	43.82	12.17	11.12	48.11	23.96	26.85	47.05	38.14	40.74	29.95	33.16	31.16
Lane Group LOS	D	B	B	D	C	C	D	D	D	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.84	5.25	2.89	1.36	11.91	12.79	0.50	2.20	3.21	0.72	4.12	1.82
50th-Percentile Queue Length [ft/ln]	145.96	131.35	72.15	34.05	297.79	319.64	12.57	54.97	80.33	18.10	102.88	45.54
95th-Percentile Queue Length [veh/ln]	9.80	9.01	5.19	2.45	17.57	18.65	0.90	3.96	5.78	1.30	7.41	3.28
95th-Percentile Queue Length [ft/ln]	245.02	225.33	129.87	61.29	439.30	466.24	22.62	98.95	144.60	32.58	185.18	81.98

Movement, Approach, & Intersection Results

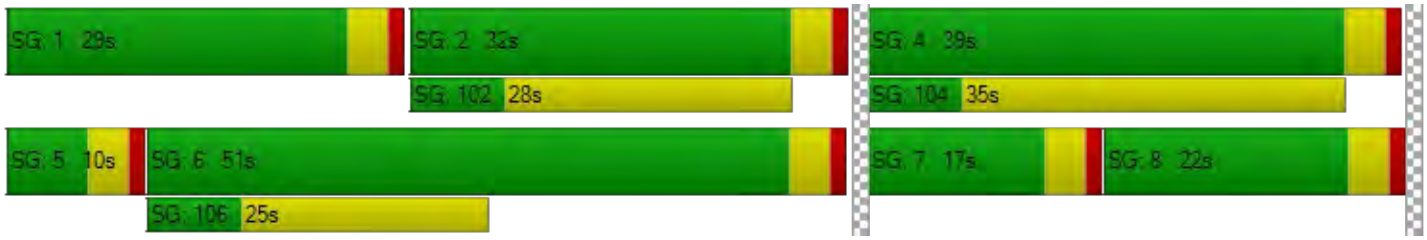
d_M, Delay for Movement [s/veh]	43.82	12.17	11.12	48.11	24.77	26.85	47.05	38.14	40.74	29.95	33.16	31.16
Movement LOS	D	B	B	D	C	C	D	D	D	C	C	C
d_A, Approach Delay [s/veh]	19.34			26.19			40.41			32.22		
Approach LOS	B			C			D			C		
d_I, Intersection Delay [s/veh]	24.83											
Intersection LOS	C											
Intersection V/C	0.721											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	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]	0.00	39.64	39.64	39.64
l_p,int, Pedestrian LOS Score for Intersection	0.000	3.176	2.655	2.460
Crosswalk LOS	F	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	939	560	360	700
d_b, Bicycle Delay [s]	14.07	25.95	33.65	21.16
l_b,int, Bicycle LOS Score for Intersection	2.687	2.658	2.210	2.099
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 7: Faculty Avenue at Conant Street

Control Type:	Signalized	Delay (sec / veh):	2.3
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.256

Intersection Setup

Name	Faculty Avenue		Conant Street		Conant Street	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Faculty Avenue		Conant Street		Conant Street	
Base Volume Input [veh/h]	1	14	229	130	261	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	14	229	130	261	30
Peak Hour Factor	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	4	60	34	68	8
Total Analysis Volume [veh/h]	1	15	240	136	274	31
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	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	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	7	0	0	2	6	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	6	0	0	10	10	0
Maximum Green [s]	30	0	0	30	30	0
Amber [s]	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	29	0	0	61	61	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	7	0	0	7	7	0
Pedestrian Clearance [s]	18	0	0	11	11	0
Delayed Vehicle Green [s]	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	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	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
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	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
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	2.00	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]	2	2	80	80	80	80
g / C, Green / Cycle	0.02	0.02	0.89	0.89	0.89	0.89
(v / s)_i Volume / Saturation Flow Rate	0.00	0.01	0.22	0.04	0.08	0.08
s, saturation flow rate [veh/h]	1781	1589	1074	3560	1870	1805
c, Capacity [veh/h]	41	37	990	3161	1660	1603
d1, Uniform Delay [s]	42.93	43.31	1.35	0.59	0.61	0.62
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]	0.24	7.13	0.58	0.03	0.11	0.12
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	0.02	0.41	0.24	0.04	0.09	0.10
d, Delay for Lane Group [s/veh]	43.16	50.44	1.93	0.61	0.72	0.73
Lane Group LOS	D	D	A	A	A	A
Critical Lane Group	No	Yes	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	0.02	0.40	0.47	0.01	0.05	0.05
50th-Percentile Queue Length [ft/ln]	0.61	9.97	11.87	0.28	1.26	1.31
95th-Percentile Queue Length [veh/ln]	0.04	0.72	0.85	0.02	0.09	0.09
95th-Percentile Queue Length [ft/ln]	1.09	17.95	21.36	0.51	2.27	2.37

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	43.16	50.44	1.93	0.61	0.73	0.73
Movement LOS	D	D	A	A	A	A
d_A, Approach Delay [s/veh]	49.99		1.46		0.73	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	2.25					
Intersection LOS	A					
Intersection V/C	0.256					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.65	34.65	34.65
l_p,int, Pedestrian LOS Score for Intersection	2.374	2.429	2.238
Crosswalk LOS	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	556	1267	1267
d_b, Bicycle Delay [s]	23.45	6.04	6.04
l_b,int, Bicycle LOS Score for Intersection	1.560	1.870	1.811
Bicycle LOS	A	A	A

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 8: Clark Avenue at Conant Street

Control Type:	Signalized	Delay (sec / veh):	9.9
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.476

Intersection Setup

Name	Clark Avenue			Clark Avenue			Conant Street			Conant 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	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			Yes			Yes		

Volumes

Name	Clark Avenue			Clark Avenue			Conant Street			Conant Street		
Base Volume Input [veh/h]	167	748	16	7	443	62	37	18	67	35	82	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	167	748	16	7	443	62	37	18	67	35	82	29
Peak Hour Factor	0.7190	0.7190	0.7190	0.7190	0.7190	0.7190	0.7190	0.7190	0.7190	0.7190	0.7190	0.7190
Other Adjustment Factor	1.0000	1.0000	1.0000	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	260	6	2	154	22	13	6	23	12	29	10
Total Analysis Volume [veh/h]	232	1040	22	10	616	86	51	25	93	49	114	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]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	0	10	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	32	0	0	32	0	0	58	0	0	58	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	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	21	0	0	18	0	0	21	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	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	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	C	C	L	C	C	L	C	R	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]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	2.00
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]	69	69	69	69	69	69	13	13	13	13
g / C, Green / Cycle	0.77	0.77	0.77	0.77	0.77	0.77	0.14	0.14	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.31	0.28	0.29	0.02	0.19	0.19	0.04	0.01	0.06	0.12
s, saturation flow rate [veh/h]	745	1870	1856	531	1870	1791	1233	1870	1589	1661
c, Capacity [veh/h]	585	1435	1425	420	1435	1374	91	268	228	288
d1, Uniform Delay [s]	6.75	3.40	3.40	5.95	3.00	3.01	36.76	33.39	34.99	37.42
k, delay calibration	0.50	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]	2.00	0.74	0.74	0.10	0.42	0.44	5.29	0.15	1.17	3.15
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	0.40	0.37	0.37	0.02	0.25	0.25	0.56	0.09	0.41	0.70
d, Delay for Lane Group [s/veh]	8.75	4.14	4.14	6.06	3.42	3.44	42.04	33.54	36.16	40.57
Lane Group LOS	A	A	A	A	A	A	D	C	D	D
Critical Lane Group	Yes	No	No	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.06	2.48	2.47	0.07	1.47	1.42	1.19	0.48	1.90	4.52
50th-Percentile Queue Length [ft/ln]	51.59	62.05	61.72	1.87	36.66	35.42	29.65	11.99	47.52	113.11
95th-Percentile Queue Length [veh/ln]	3.71	4.47	4.44	0.13	2.64	2.55	2.13	0.86	3.42	8.01
95th-Percentile Queue Length [ft/ln]	92.87	111.69	111.10	3.36	65.99	63.76	53.37	21.59	85.54	200.31

Movement, Approach, & Intersection Results

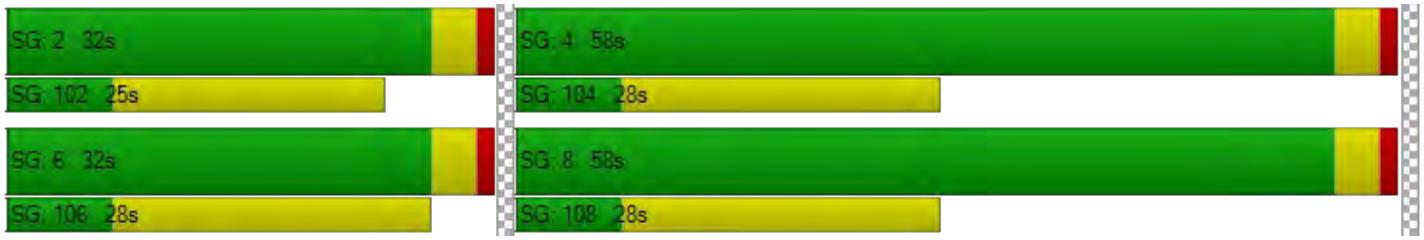
d_M, Delay for Movement [s/veh]	8.75	4.14	4.14	6.06	3.43	3.44	42.04	33.54	36.16	40.57	40.57	40.57
Movement LOS	A	A	A	A	A	A	D	C	D	D	D	D
d_A, Approach Delay [s/veh]	4.97			3.47			37.55			40.57		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	9.87											
Intersection LOS	A											
Intersection V/C	0.476											

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]	34.63	34.63	34.63	34.63
l_p,int, Pedestrian LOS Score for Intersection	2.769	2.731	2.880	2.208
Crosswalk LOS	C	B	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	623	623	1201	1201
d_b, Bicycle Delay [s]	21.32	21.32	7.17	7.17
l_b,int, Bicycle LOS Score for Intersection	2.627	2.147	1.838	1.895
Bicycle LOS	B	B	A	A

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 9: Lakewood Boulevard at Wardlow Road

Control Type:	Signalized	Delay (sec / veh):	31.1
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.668

Intersection Setup

Name	Lakewood Boulevard			Lakewood Boulevard			Wardlow Road			Wardlow 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	0	1	0	0	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	Lakewood Boulevard			Lakewood Boulevard			Wardlow Road			Wardlow Road		
Base Volume Input [veh/h]	306	1593	166	201	1338	85	50	25	23	378	93	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	306	1593	166	201	1338	85	50	25	23	378	93	236
Peak Hour Factor	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	93	482	50	61	404	26	15	8	7	114	28	71
Total Analysis Volume [veh/h]	370	1926	201	243	1618	103	60	30	28	457	112	285
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	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	10	0	6	10	0	6	10	0	6	10	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	40	0	13	35	0	10	46	0	21	57	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	24	0	0	24	0	0	35	0	0	35	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	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]	14	66	66	9	61	61	5	12	12	17	24	24
g / C, Green / Cycle	0.12	0.55	0.55	0.08	0.51	0.51	0.04	0.10	0.10	0.14	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.11	0.31	0.31	0.07	0.25	0.25	0.02	0.01	0.02	0.13	0.03	0.18
s, saturation flow rate [veh/h]	3459	5094	1756	3459	5094	1797	3459	3560	1589	3459	3560	1589
c, Capacity [veh/h]	405	2785	960	262	2574	908	152	364	163	491	713	318
d1, Uniform Delay [s]	52.40	17.87	17.91	55.17	19.58	19.58	55.83	48.79	49.25	50.92	39.65	46.79
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	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	1.00	1.00
d2, Incremental Delay [s]	8.34	0.84	2.45	13.61	0.68	1.92	1.65	0.10	0.50	8.36	0.10	8.82
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	0.91	0.57	0.57	0.93	0.49	0.49	0.39	0.08	0.17	0.93	0.16	0.90
d, Delay for Lane Group [s/veh]	60.74	18.72	20.37	68.78	20.26	21.50	57.47	48.89	49.74	59.28	39.75	55.61
Lane Group LOS	E	B	C	E	C	C	E	D	D	E	D	E
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	5.97	9.53	10.35	4.15	7.84	8.61	0.92	0.41	0.79	7.34	1.39	9.04
50th-Percentile Queue Length [ft/ln]	149.29	238.19	258.81	103.67	196.01	215.28	23.01	10.36	19.84	183.61	34.64	226.00
95th-Percentile Queue Length [veh/ln]	9.98	14.59	15.63	7.46	12.43	13.42	1.66	0.75	1.43	11.79	2.49	13.97
95th-Percentile Queue Length [ft/ln]	249.48	364.75	390.73	186.60	310.81	335.59	41.41	18.64	35.72	294.72	62.34	349.27

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	60.74	19.01	20.37	68.78	20.53	21.50	57.47	48.89	49.74	59.28	39.75	55.61
Movement LOS	E	B	C	E	C	C	E	D	D	E	D	E
d_A, Approach Delay [s/veh]	25.30			26.55			53.46			55.49		
Approach LOS	C			C			D			E		
d_I, Intersection Delay [s/veh]	31.11											
Intersection LOS	C											
Intersection V/C	0.668											

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	3.429	3.393	2.939	2.793
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]	600	517	700	883
d_b, Bicycle Delay [s]	29.41	33.02	25.36	18.72
l_b,int, Bicycle LOS Score for Intersection	2.590	2.370	1.657	2.264
Bicycle LOS	B	B	A	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 10: Clark Avenue at Wardlow Avenue

Control Type:	Signalized	Delay (sec / veh):	19.5
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.481

Intersection Setup

Name	Clark Avenue			Clark Avenue			Wardlow Avenue			Wardlow Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	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	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			Yes			Yes		

Volumes

Name	Clark Avenue			Clark Avenue			Wardlow Avenue			Wardlow Avenue		
Base Volume Input [veh/h]	53	704	80	68	417	87	65	273	42	91	579	133
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	53	704	80	68	417	87	65	273	42	91	579	133
Peak Hour Factor	0.9280	0.9280	0.9280	0.9280	0.9280	0.9280	0.9280	0.9280	0.9280	0.9280	0.9280	0.9280
Other Adjustment Factor	1.0000	1.0000	1.0000	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	190	22	18	112	23	18	74	11	25	156	36
Total Analysis Volume [veh/h]	57	759	86	73	449	94	70	294	45	98	624	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]	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	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	0	10	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	39	0	0	39	0	0	61	0	0	61	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	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	28	0	0	21	0	0	24	0	0	24	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	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	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	C	C	L	C	C	L	C	C	C	C
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]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	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	2.00
g_i, Effective Green Time [s]	51	51	51	51	51	51	41	41	41	41	41
g / C, Green / Cycle	0.51	0.51	0.51	0.51	0.51	0.51	0.41	0.41	0.41	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.07	0.16	0.16	0.11	0.10	0.10	0.10	0.09	0.09	0.28	0.28
s, saturation flow rate [veh/h]	863	3560	1775	652	3560	1712	701	1870	1785	1473	1611
c, Capacity [veh/h]	464	1831	913	347	1831	881	161	758	724	642	653
d1, Uniform Delay [s]	15.94	14.00	14.02	18.85	13.13	13.17	42.38	19.45	19.48	25.33	24.47
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	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	1.00
d2, Incremental Delay [s]	0.54	0.44	0.88	1.38	0.24	0.52	1.86	0.15	0.16	1.12	1.29
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
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	0.12	0.31	0.31	0.21	0.20	0.20	0.44	0.23	0.23	0.65	0.69
d, Delay for Lane Group [s/veh]	16.48	14.44	14.90	20.23	13.37	13.70	44.23	19.60	19.65	26.45	25.75
Lane Group LOS	B	B	B	C	B	B	D	B	B	C	C
Critical Lane Group	No	No	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.82	3.66	3.79	1.22	2.21	2.26	1.74	2.61	2.54	8.33	8.67
50th-Percentile Queue Length [ft/ln]	20.50	91.49	94.82	30.47	55.27	56.54	43.59	65.28	63.41	208.30	216.85
95th-Percentile Queue Length [veh/ln]	1.48	6.59	6.83	2.19	3.98	4.07	3.14	4.70	4.57	13.07	13.50
95th-Percentile Queue Length [ft/ln]	36.91	164.68	170.68	54.84	99.49	101.78	78.47	117.50	114.15	326.65	337.60

Movement, Approach, & Intersection Results

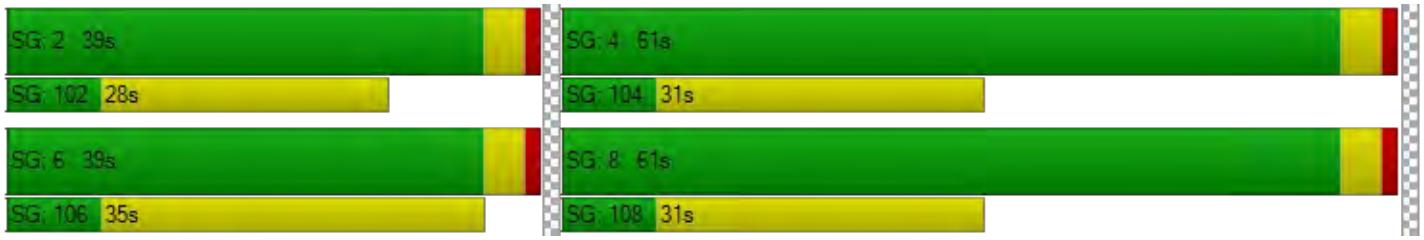
d_M, Delay for Movement [s/veh]	16.48	14.56	14.90	20.23	13.43	13.70	44.23	19.62	19.65	26.45	26.11	25.75
Movement LOS	B	B	B	C	B	B	D	B	B	C	C	C
d_A, Approach Delay [s/veh]	14.71			14.28			23.84			26.09		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	19.48											
Intersection LOS	B											
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]	39.60	39.60	39.60	39.60
l_p,int, Pedestrian LOS Score for Intersection	2.946	2.919	2.617	2.561
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	700	700	1140	1140
d_b, Bicycle Delay [s]	21.12	21.12	9.24	9.24
l_b,int, Bicycle LOS Score for Intersection	2.056	1.898	1.897	2.273
Bicycle LOS	B	A	A	B

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 1: Lakewood Boulevard at Carson Street

Control Type:	Signalized	Delay (sec / veh):	36.3
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.634

Intersection Setup

Name	Lakewood Boulevard			Lakewood Boulevard			Carson Street			Carson 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	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	Lakewood Boulevard			Lakewood Boulevard			Carson Street			Carson Street		
Base Volume Input [veh/h]	283	1175	306	87	683	104	355	984	220	230	690	81
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	283	1175	306	87	683	104	355	984	220	230	690	81
Peak Hour Factor	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810
Other Adjustment Factor	1.0000	1.0000	1.0000	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	299	78	22	174	27	90	251	56	59	176	21
Total Analysis Volume [veh/h]	288	1198	312	89	696	106	362	1003	224	234	703	83
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	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	1	6	6	5	2	0	3	8	8	7	4	0
Auxiliary Signal Groups			6,7						1,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	10	10	6	10	0	6	10	10	6	10	0
Maximum Green [s]	30	30	30	30	30	0	30	30	30	30	30	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	16	47	47	11	42	0	23	46	46	16	39	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	28	28	0	31	0	0	35	35	0	28	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	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No	No	No	No	
Maximum Recall	No	No	No	No	No		No	No	No	No	No	
Pedestrian Recall	No	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	R	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	0.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	57	73	7	52	52	15	28	44	12	26	26
g / C, Green / Cycle	0.10	0.47	0.60	0.06	0.43	0.43	0.12	0.24	0.37	0.10	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.08	0.24	0.20	0.05	0.12	0.12	0.10	0.20	0.14	0.07	0.15	0.15
s, saturation flow rate [veh/h]	3459	5094	1589	1781	5094	1714	3459	5094	1589	3459	3560	1771
c, Capacity [veh/h]	348	2396	960	105	2185	735	428	1206	589	348	761	378
d1, Uniform Delay [s]	52.98	22.02	11.70	55.95	22.18	22.25	51.49	43.54	27.68	52.09	43.53	43.56
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.13	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	1.00	1.00
d2, Incremental Delay [s]	5.06	0.75	0.90	16.45	0.31	0.95	4.69	1.56	0.49	2.27	1.12	2.27
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	0.83	0.50	0.32	0.85	0.27	0.28	0.85	0.83	0.38	0.67	0.69	0.69
d, Delay for Lane Group [s/veh]	58.04	22.77	12.60	72.39	22.49	23.20	56.19	45.10	28.17	54.36	44.65	45.84
Lane Group LOS	E	C	B	E	C	C	E	D	C	D	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.50	7.87	4.24	3.15	3.70	3.97	5.60	9.57	4.80	3.51	7.29	7.41
50th-Percentile Queue Length [ft/ln]	112.59	196.73	105.95	78.76	92.40	99.16	140.10	239.20	120.06	87.80	182.24	185.32
95th-Percentile Queue Length [veh/ln]	7.98	12.47	7.61	5.67	6.65	7.14	9.49	14.64	8.40	6.32	11.72	11.88
95th-Percentile Queue Length [ft/ln]	199.60	311.74	190.35	141.77	166.31	178.48	237.16	366.03	209.90	158.05	292.93	296.95

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	58.04	22.77	12.60	72.39	22.59	23.20	56.19	45.10	28.17	54.36	44.95	45.84
Movement LOS	E	C	B	E	C	C	E	D	C	D	D	D
d_A, Approach Delay [s/veh]	26.65			27.64			45.24			47.18		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	36.35											
Intersection LOS	D											
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]	49.52	49.52	49.52	49.52
l_p,int, Pedestrian LOS Score for Intersection	3.268	3.048	3.154	3.035
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	633	700	583
d_b, Bicycle Delay [s]	24.72	28.03	25.36	30.12
l_b,int, Bicycle LOS Score for Intersection	2.549	1.927	2.434	2.121
Bicycle LOS	B	A	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: Faculty Avenue at Carson Street

Control Type:	Two-way stop	Delay (sec / veh):	28.2
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.088

Intersection Setup

Name	Faculty Avenue		Carson Street		Carson Street	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		40.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Faculty Avenue		Carson Street		Carson Street	
Base Volume Input [veh/h]	15	74	98	1264	895	55
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	74	98	1264	895	55
Peak Hour Factor	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	19	26	331	234	14
Total Analysis Volume [veh/h]	16	77	103	1324	937	58
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

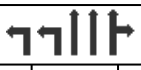
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.17	0.15	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	28.24	16.66	11.12	0.00	0.00	0.00
Movement LOS	D	C	B	A	A	A
95th-Percentile Queue Length [veh/ln]	1.03	1.03	0.52	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	25.71	25.71	13.05	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	18.65		0.80		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	1.15					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 3: Clark Avenue at Carson Street

Control Type:	Signalized	Delay (sec / veh):	30.9
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.686

Intersection Setup

Name	Clark Avenue			Clark Avenue			Carson Street			Carson 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	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	Clark Avenue			Clark Avenue			Carson Street			Carson Street		
Base Volume Input [veh/h]	134	553	326	89	432	89	102	1005	152	110	677	97
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	134	553	326	89	432	89	102	1005	152	110	677	97
Peak Hour Factor	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470
Other Adjustment Factor	1.0000	1.0000	1.0000	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	146	86	23	114	23	27	265	40	29	179	26
Total Analysis Volume [veh/h]	141	584	344	94	456	94	108	1061	161	116	715	102
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	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	3	8	8	7	4	0	5	2	2	1	6	0
Auxiliary Signal Groups			1,8						2,3			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	10	10	6	10	0	6	10	10	6	10	0
Maximum Green [s]	30	30	30	30	30	0	30	30	30	30	30	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	11	50	50	10	49	0	16	35	35	10	29	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	28	28	0	28	0	0	24	24	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]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No	No	No	No	
Maximum Recall	No	No	No	No	No		No	No	No	No	No	
Pedestrian Recall	No	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	R	L	C	C
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	0.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	36	46	6	34	34	8	42	53	6	40	40
g / C, Green / Cycle	0.07	0.34	0.44	0.05	0.33	0.33	0.08	0.40	0.50	0.06	0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.04	0.31	0.12	0.03	0.15	0.15	0.06	0.21	0.10	0.03	0.15	0.15
s, saturation flow rate [veh/h]	3459	1870	2813	3459	1870	1761	1781	5094	1589	3459	3560	1754
c, Capacity [veh/h]	233	635	1226	188	611	575	137	2016	797	200	1342	661
d1, Uniform Delay [s]	47.65	33.33	19.07	48.31	28.07	28.11	47.69	24.24	14.55	48.26	24.10	24.13
k, delay calibration	0.11	0.25	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]	2.51	12.13	0.12	2.05	0.55	0.59	9.69	0.99	0.57	2.63	0.92	1.88
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	0.60	0.92	0.28	0.50	0.46	0.47	0.79	0.53	0.20	0.58	0.41	0.41
d, Delay for Lane Group [s/veh]	50.17	45.45	19.19	50.36	28.62	28.69	57.38	25.23	15.12	50.89	25.02	26.01
Lane Group LOS	D	D	B	D	C	C	E	C	B	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.87	16.05	2.68	1.25	5.67	5.39	3.14	6.76	2.22	1.55	5.10	5.24
50th-Percentile Queue Length [ft/ln]	46.76	401.32	67.12	31.20	141.71	134.65	78.39	169.10	55.39	38.77	127.41	131.09
95th-Percentile Queue Length [veh/ln]	3.37	22.62	4.83	2.25	9.57	9.19	5.64	11.03	3.99	2.79	8.80	9.00
95th-Percentile Queue Length [ft/ln]	84.17	565.59	120.81	56.16	239.33	229.80	141.10	275.74	99.70	69.78	219.97	224.98

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	50.17	45.45	19.19	50.36	28.65	28.69	57.38	25.23	15.12	50.89	25.25	26.01
Movement LOS	D	D	B	D	C	C	E	C	B	D	C	C
d_A, Approach Delay [s/veh]	37.62			31.82			26.61			28.52		
Approach LOS	D			C			C			C		
d_I, Intersection Delay [s/veh]	30.87											
Intersection LOS	C											
Intersection V/C	0.686											

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	2.852	2.588	3.011	3.029
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]	876	857	590	476
d_b, Bicycle Delay [s]	16.60	17.17	26.10	30.50
l_b,int, Bicycle LOS Score for Intersection	3.323	2.091	2.291	2.073
Bicycle LOS	C	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 4: Bellflower Boulevard at Carson Street

Control Type:	Signalized	Delay (sec / veh):	34.3
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.789

Intersection Setup

Name	Bellflower Boulevard			Bellflower Boulevard			Carson Street			Carson 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	Bellflower Boulevard			Bellflower Boulevard			Carson Street			Carson Street		
Base Volume Input [veh/h]	138	896	148	109	469	62	162	1150	103	131	694	150
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
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	896	148	109	469	62	162	1150	103	131	694	150
Peak Hour Factor	0.9360	0.9360	0.9360	0.9360	0.9360	0.9360	0.9360	0.9360	0.9360	0.9360	0.9360	0.9360
Other Adjustment Factor	1.0000	1.0000	1.0000	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	239	40	29	125	17	43	307	28	35	185	40
Total Analysis Volume [veh/h]	147	957	158	116	501	66	173	1229	110	140	741	160
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	10	0	6	10	0	6	10	0	6	10	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	40	0	12	37	0	19	35	0	13	29	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	24	0	0	24	0	0	24	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]	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	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]	10	30	30	8	28	28	12	37	37	9	34	34
g / C, Green / Cycle	0.10	0.30	0.30	0.08	0.28	0.28	0.12	0.37	0.37	0.09	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.08	0.27	0.10	0.07	0.15	0.15	0.10	0.25	0.25	0.08	0.17	0.17
s, saturation flow rate [veh/h]	1781	3560	1589	1781	1870	1795	1781	3560	1792	1781	3560	1706
c, Capacity [veh/h]	179	1072	479	144	526	505	207	1309	659	162	1218	583
d1, Uniform Delay [s]	44.15	33.44	27.15	45.26	30.58	30.60	43.30	26.70	26.70	44.93	26.14	26.18
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]	8.96	2.85	0.40	10.11	0.90	0.94	8.52	2.87	5.60	12.89	1.46	3.08
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	0.82	0.89	0.33	0.81	0.55	0.55	0.83	0.68	0.68	0.87	0.50	0.50
d, Delay for Lane Group [s/veh]	53.11	36.29	27.55	55.37	31.48	31.54	51.83	29.57	32.30	57.83	27.60	29.26
Lane Group LOS	D	D	C	E	C	C	D	C	C	E	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.99	11.25	2.95	3.22	5.97	5.76	4.65	9.24	9.80	3.98	5.89	5.95
50th-Percentile Queue Length [ft/ln]	99.79	281.17	73.87	80.45	149.17	143.93	116.17	230.99	245.07	99.56	147.16	148.73
95th-Percentile Queue Length [veh/ln]	7.19	16.75	5.32	5.79	9.97	9.69	8.18	14.22	14.94	7.17	9.87	9.95
95th-Percentile Queue Length [ft/ln]	179.63	418.66	132.96	144.80	249.32	242.30	204.55	355.62	373.44	179.20	246.63	248.73

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	53.11	36.29	27.55	55.37	31.51	31.54	51.83	30.32	32.30	57.83	27.90	29.26
Movement LOS	D	D	C	E	C	C	D	C	C	E	C	C
d_A, Approach Delay [s/veh]	37.15			35.56			32.93			32.13		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	34.33											
Intersection LOS	C											
Intersection V/C	0.789											

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	2.785	2.689	2.942	2.953
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]	719	660	620	500
d_b, Bicycle Delay [s]	20.51	22.48	23.84	28.16
l_b,int, Bicycle LOS Score for Intersection	2.601	2.123	2.391	2.132
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 5: Clark Avenue at Lew Davis Street

Control Type:	Signalized	Delay (sec / veh):	8.5
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.495

Intersection Setup

Name	Clark Avenue		Clark Avenue		Lew Davis Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	Clark Avenue		Clark Avenue		Lew Davis Street	
Base Volume Input [veh/h]	24	965	575	40	155	77
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	24	965	575	40	155	77
Peak Hour Factor	0.7930	0.7930	0.7930	0.7930	0.7930	0.7930
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	304	181	13	49	24
Total Analysis Volume [veh/h]	30	1217	725	50	195	97
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	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	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	0	6	2	0	3	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	0	10	10	0	6	0
Maximum Green [s]	0	30	30	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	1.0	0.0
Split [s]	0	33	33	0	57	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	7	7	0	7	0
Pedestrian Clearance [s]	0	14	14	0	21	0
Delayed Vehicle Green [s]	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	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	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
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	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	C	L	R
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]	2.00	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]	70	70	70	70	12	12
g / C, Green / Cycle	0.77	0.77	0.77	0.77	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.04	0.34	0.21	0.21	0.11	0.06
s, saturation flow rate [veh/h]	696	3560	1870	1828	1781	1589
c, Capacity [veh/h]	553	2759	1449	1417	242	216
d1, Uniform Delay [s]	4.80	3.46	2.87	2.89	37.65	35.71
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.19	0.51	0.45	0.48	6.20	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	0.05	0.44	0.27	0.27	0.81	0.45
d, Delay for Lane Group [s/veh]	4.99	3.97	3.32	3.36	43.85	37.17
Lane Group LOS	A	A	A	A	D	D
Critical Lane Group	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.19	2.73	1.52	1.53	4.51	2.02
50th-Percentile Queue Length [ft/ln]	4.71	68.15	37.99	38.33	112.77	50.47
95th-Percentile Queue Length [veh/ln]	0.34	4.91	2.73	2.76	7.99	3.63
95th-Percentile Queue Length [ft/ln]	8.49	122.67	68.37	68.99	199.85	90.84

Movement, Approach, & Intersection Results

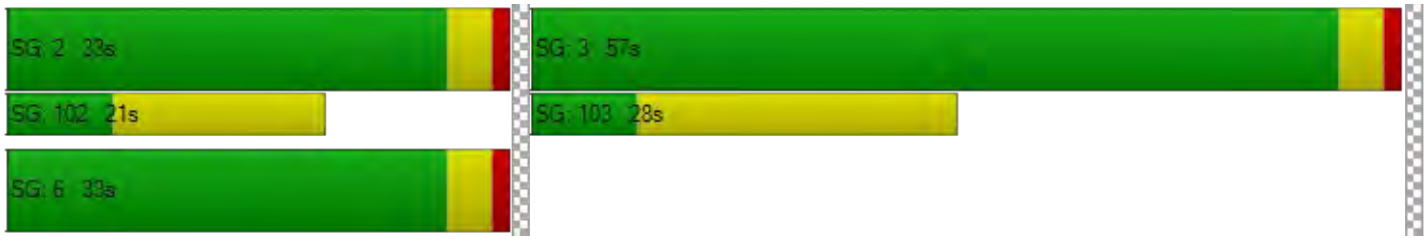
d_M, Delay for Movement [s/veh]	4.99	3.97	3.34	3.36	43.85	37.17
Movement LOS	A	A	A	A	D	D
d_A, Approach Delay [s/veh]	3.99		3.34		41.63	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	8.53					
Intersection LOS	A					
Intersection V/C	0.495					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.63	0.00	34.63
l_p,int, Pedestrian LOS Score for Intersection	2.703	0.000	2.103
Crosswalk LOS	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	645	645	1179
d_b, Bicycle Delay [s]	20.63	20.63	7.58
l_b,int, Bicycle LOS Score for Intersection	2.588	2.199	1.560
Bicycle LOS	B	B	A

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: Lakewood Boulevard at Conant Street

Control Type:	Signalized	Delay (sec / veh):	23.0
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.664

Intersection Setup

Name	Lakewood Boulevard			Lakewood Boulevard			Conant Street			Conant 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	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	No			Yes			Yes			Yes		

Volumes

Name	Lakewood Boulevard			Lakewood Boulevard			Conant Street			Conant Street		
Base Volume Input [veh/h]	167	1392	74	68	1104	21	104	134	449	105	121	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	167	1392	74	68	1104	21	104	134	449	105	121	82
Peak Hour Factor	0.9110	0.9110	0.9110	0.9110	0.9110	0.9110	0.9110	0.9110	0.9110	0.9110	0.9110	0.9110
Other Adjustment Factor	1.0000	1.0000	1.0000	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	382	20	19	303	6	29	37	123	29	33	23
Total Analysis Volume [veh/h]	183	1528	81	75	1212	23	114	147	493	115	133	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]	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	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	6	10	0	0	10	0	6	10	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	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	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	10	32	0	10	32	0	0	38	0	10	48	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	21	0	0	0	0	0	28	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	2.0	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	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	L	C	C	L	C	R	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]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	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	0.00	2.00	2.00
g_i, Effective Green Time [s]	6	44	44	5	43	43	19	19	19	29	29	29
g / C, Green / Cycle	0.07	0.49	0.49	0.06	0.48	0.48	0.21	0.21	0.21	0.32	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.05	0.30	0.05	0.02	0.23	0.23	0.10	0.08	0.18	0.11	0.07	0.06
s, saturation flow rate [veh/h]	3459	5094	1589	3459	3560	1852	1158	1870	2813	1060	1870	1589
c, Capacity [veh/h]	234	2475	772	199	1694	881	244	398	599	411	605	514
d1, Uniform Delay [s]	41.39	17.03	12.56	40.93	16.05	16.05	36.86	30.31	33.86	22.29	22.22	21.88
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	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	1.00	1.00
d2, Incremental Delay [s]	5.68	1.17	0.27	1.17	0.97	1.87	1.39	0.57	2.91	0.37	0.18	0.16
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	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	0.62	0.10	0.38	0.48	0.48	0.47	0.37	0.82	0.28	0.22	0.18
d, Delay for Lane Group [s/veh]	47.07	18.20	12.84	42.10	17.02	17.92	38.25	30.88	36.77	22.65	22.40	22.04
Lane Group LOS	D	B	B	D	B	B	D	C	D	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.16	7.51	0.91	0.83	5.60	6.04	2.45	2.75	5.27	1.77	2.04	1.37
50th-Percentile Queue Length [ft/ln]	54.03	187.65	22.69	20.66	139.93	151.07	61.20	68.68	131.75	44.29	51.12	34.13
95th-Percentile Queue Length [veh/ln]	3.89	12.00	1.63	1.49	9.48	10.07	4.41	4.94	9.03	3.19	3.68	2.46
95th-Percentile Queue Length [ft/ln]	97.25	299.98	40.85	37.19	236.93	251.85	110.16	123.62	225.87	79.72	92.02	61.43

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.07	18.20	12.84	42.10	17.32	17.92	38.25	30.88	36.77	22.65	22.40	22.04
Movement LOS	D	B	B	D	B	B	D	C	D	C	C	C
d_A, Approach Delay [s/veh]	20.90			18.75			35.85			22.39		
Approach LOS	C			B			D			C		
d_I, Intersection Delay [s/veh]	23.04											
Intersection LOS	C											
Intersection V/C	0.664											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	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]	0.00	34.72	34.72	34.72
l_p,int, Pedestrian LOS Score for Intersection	0.000	3.258	2.630	2.424
Crosswalk LOS	F	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	622	622	755	977
d_b, Bicycle Delay [s]	21.40	21.40	17.46	11.79
l_b,int, Bicycle LOS Score for Intersection	2.545	2.280	2.804	2.117
Bicycle LOS	B	B	C	B

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 7: Faculty Avenue at Conant Street

Control Type:	Signalized	Delay (sec / veh):	13.9
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.177

Intersection Setup

Name	Faculty Avenue		Conant Street		Conant Street	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Faculty Avenue		Conant Street		Conant Street	
Base Volume Input [veh/h]	22	149	54	197	186	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	22	149	54	197	186	20
Peak Hour Factor	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	40	14	53	50	5
Total Analysis Volume [veh/h]	23	159	58	210	199	21
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	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	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	7	0	0	2	6	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	6	0	0	10	10	0
Maximum Green [s]	30	0	0	30	30	0
Amber [s]	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	68	0	0	22	22	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	7	0	0	7	7	0
Pedestrian Clearance [s]	18	0	0	11	11	0
Delayed Vehicle Green [s]	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	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	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
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	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
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	2.00	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]	11	11	71	71	71	71
g / C, Green / Cycle	0.12	0.12	0.79	0.79	0.79	0.79
(v / s)_i Volume / Saturation Flow Rate	0.01	0.10	0.05	0.06	0.06	0.06
s, saturation flow rate [veh/h]	1781	1589	1161	3560	1870	1809
c, Capacity [veh/h]	220	196	939	2804	1473	1425
d1, Uniform Delay [s]	34.96	38.34	3.20	2.16	2.16	2.16
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]	0.21	7.75	0.13	0.05	0.10	0.11
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	0.10	0.81	0.06	0.07	0.07	0.08
d, Delay for Lane Group [s/veh]	35.16	46.09	3.33	2.21	2.25	2.27
Lane Group LOS	D	D	A	A	A	A
Critical Lane Group	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.46	3.78	0.25	0.29	0.32	0.33
50th-Percentile Queue Length [ft/ln]	11.39	94.51	6.33	7.26	8.09	8.14
95th-Percentile Queue Length [veh/ln]	0.82	6.80	0.46	0.52	0.58	0.59
95th-Percentile Queue Length [ft/ln]	20.50	170.12	11.40	13.07	14.56	14.65

Movement, Approach, & Intersection Results

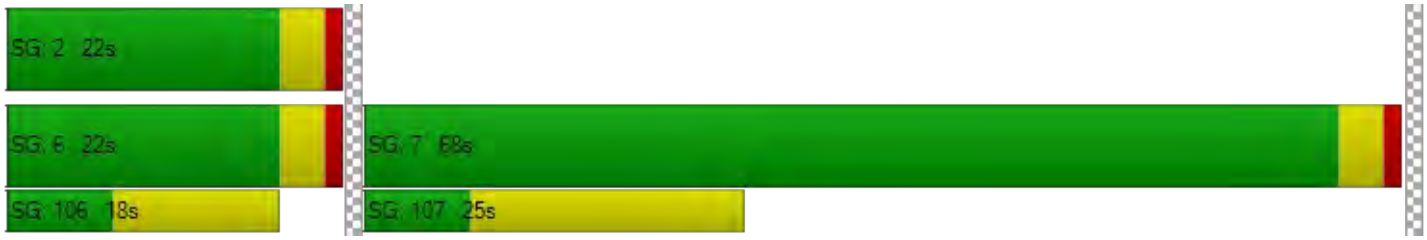
d_M, Delay for Movement [s/veh]	35.16	46.09	3.33	2.21	2.26	2.27
Movement LOS	D	D	A	A	A	A
d_A, Approach Delay [s/veh]	44.71		2.45		2.26	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	13.87					
Intersection LOS	B					
Intersection V/C	0.177					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.63	34.63	34.63
l_p,int, Pedestrian LOS Score for Intersection	2.107	2.421	2.241
Crosswalk LOS	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1424	400	400
d_b, Bicycle Delay [s]	3.73	28.76	28.76
l_b,int, Bicycle LOS Score for Intersection	1.560	1.781	1.741
Bicycle LOS	A	A	A

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 8: Clark Avenue at Conant Street

Control Type:	Signalized	Delay (sec / veh):	10.4
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.459

Intersection Setup

Name	Clark Avenue			Clark Avenue			Conant Street			Conant 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	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			Yes			Yes		

Volumes

Name	Clark Avenue			Clark Avenue			Conant Street			Conant Street		
Base Volume Input [veh/h]	109	859	48	25	540	36	60	71	147	16	35	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	109	859	48	25	540	36	60	71	147	16	35	20
Peak Hour Factor	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070
Other Adjustment Factor	1.0000	1.0000	1.0000	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	266	15	8	167	11	19	22	46	5	11	6
Total Analysis Volume [veh/h]	135	1064	59	31	669	45	74	88	182	20	43	25
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]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	0	10	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	32	0	0	32	0	0	58	0	0	58	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	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	21	0	0	18	0	0	21	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	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	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	C	C	L	C	C	L	C	R	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]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	2.00
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]	69	69	69	69	69	69	13	13	13	13
g / C, Green / Cycle	0.77	0.77	0.77	0.77	0.77	0.77	0.14	0.14	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.18	0.30	0.30	0.06	0.19	0.19	0.06	0.05	0.11	0.05
s, saturation flow rate [veh/h]	736	1870	1836	501	1870	1829	1333	1870	1589	1626
c, Capacity [veh/h]	580	1437	1411	397	1437	1406	186	266	226	281
d1, Uniform Delay [s]	5.68	3.45	3.45	6.50	2.98	2.98	35.94	34.66	37.30	34.75
k, delay calibration	0.50	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]	0.94	0.81	0.83	0.38	0.42	0.43	1.38	0.72	6.56	0.63
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	0.23	0.39	0.39	0.08	0.25	0.25	0.40	0.33	0.80	0.31
d, Delay for Lane Group [s/veh]	6.62	4.26	4.28	6.88	3.40	3.41	37.31	35.38	43.86	35.38
Lane Group LOS	A	A	A	A	A	A	D	D	D	D
Critical Lane Group	No	No	Yes	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.00	2.68	2.64	0.25	1.46	1.44	1.56	1.76	4.22	1.76
50th-Percentile Queue Length [ft/ln]	25.01	66.91	65.98	6.28	36.55	35.89	39.07	44.12	105.54	44.12
95th-Percentile Queue Length [veh/ln]	1.80	4.82	4.75	0.45	2.63	2.58	2.81	3.18	7.59	3.18
95th-Percentile Queue Length [ft/ln]	45.02	120.44	118.77	11.30	65.79	64.60	70.32	79.41	189.79	79.42

Movement, Approach, & Intersection Results

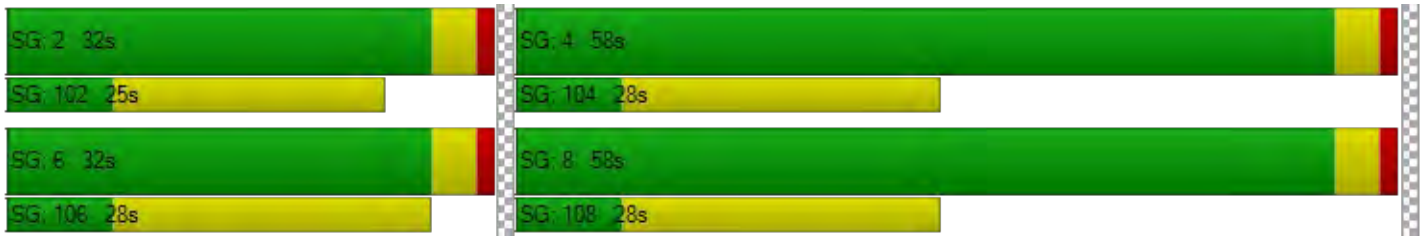
d_M, Delay for Movement [s/veh]	6.62	4.27	4.28	6.88	3.41	3.41	37.31	35.38	43.86	35.38	35.38	35.38
Movement LOS	A	A	A	A	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	4.52			3.55			40.28			35.38		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	10.39											
Intersection LOS	B											
Intersection V/C	0.459											

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]	34.63	34.63	34.63	34.63
l_p,int, Pedestrian LOS Score for Intersection	2.743	2.777	2.736	2.239
Crosswalk LOS	B	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	623	623	1201	1201
d_b, Bicycle Delay [s]	21.32	21.32	7.17	7.17
l_b,int, Bicycle LOS Score for Intersection	2.597	2.174	2.127	1.705
Bicycle LOS	B	B	B	A

Sequence

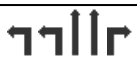
Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 9: Lakewood Boulevard at Wardlow Road

Control Type:	Signalized	Delay (sec / veh):	20.6
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.544

Intersection Setup

Name	Lakewood Boulevard			Lakewood Boulevard			Wardlow Road			Wardlow 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	0	1	0	0	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	Lakewood Boulevard			Lakewood Boulevard			Wardlow Road			Wardlow Road		
Base Volume Input [veh/h]	172	1471	286	224	1340	61	67	61	38	151	72	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	172	1471	286	224	1340	61	67	61	38	151	72	138
Peak Hour Factor	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340
Other Adjustment Factor	1.0000	1.0000	1.0000	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	394	77	60	359	16	18	16	10	40	19	37
Total Analysis Volume [veh/h]	184	1575	306	240	1435	65	72	65	41	162	77	148
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	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	10	0	6	10	0	6	10	0	6	10	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	35	0	13	36	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	24	0	0	24	0	0	35	0	0	35	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	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]	8	63	63	9	64	64	5	11	11	7	12	12
g / C, Green / Cycle	0.07	0.60	0.60	0.09	0.61	0.61	0.05	0.10	0.10	0.06	0.12	0.12
(v / s)_i Volume / Saturation Flow Rate	0.05	0.28	0.28	0.07	0.22	0.22	0.02	0.02	0.03	0.05	0.02	0.09
s, saturation flow rate [veh/h]	3459	5094	1676	3459	5094	1817	3459	3560	1589	3459	3560	1589
c, Capacity [veh/h]	249	3029	997	299	3102	1107	177	361	161	226	412	184
d1, Uniform Delay [s]	47.81	11.96	11.96	47.14	10.26	10.26	48.33	43.24	43.57	48.17	42.02	45.33
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	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	1.00	1.00
d2, Incremental Delay [s]	4.26	0.52	1.57	5.03	0.32	0.90	1.50	0.24	0.82	4.20	0.22	8.03
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	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	0.47	0.47	0.80	0.36	0.36	0.41	0.18	0.25	0.72	0.19	0.81
d, Delay for Lane Group [s/veh]	52.07	12.48	13.53	52.17	10.58	11.16	49.83	43.48	44.40	52.37	42.24	53.36
Lane Group LOS	D	B	B	D	B	B	D	D	D	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.50	5.97	6.18	3.28	4.09	4.55	0.95	0.78	1.02	2.21	0.92	4.15
50th-Percentile Queue Length [ft/ln]	62.50	149.19	154.62	81.90	102.20	113.85	23.74	19.62	25.49	55.15	22.88	103.82
95th-Percentile Queue Length [veh/ln]	4.50	9.97	10.26	5.90	7.36	8.05	1.71	1.41	1.84	3.97	1.65	7.48
95th-Percentile Queue Length [ft/ln]	112.49	249.35	256.58	147.42	183.96	201.35	42.73	35.32	45.89	99.26	41.18	186.88

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	52.07	12.58	13.53	52.17	10.71	11.16	49.83	43.48	44.40	52.37	42.24	53.36
Movement LOS	D	B	B	D	B	B	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	16.24			16.45			46.26			50.73		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	20.60											
Intersection LOS	C											
Intersection V/C	0.544											

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	3.335	3.318	2.911	2.740
Crosswalk LOS	C	C	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	590	609	800	800
d_b, Bicycle Delay [s]	26.10	25.40	18.93	18.93
l_b,int, Bicycle LOS Score for Intersection	2.411	2.277	1.706	1.879
Bicycle LOS	B	B	A	A

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 10: Clark Avenue at Wardlow Avenue

Control Type:	Signalized	Delay (sec / veh):	15.6
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.345

Intersection Setup

Name	Clark Avenue			Clark Avenue			Wardlow Avenue			Wardlow Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	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	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			Yes			Yes		

Volumes

Name	Clark Avenue			Clark Avenue			Wardlow Avenue			Wardlow Avenue		
Base Volume Input [veh/h]	37	835	107	99	531	56	117	439	38	36	265	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
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	835	107	99	531	56	117	439	38	36	265	66
Peak Hour Factor	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770
Other Adjustment Factor	1.0000	1.0000	1.0000	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	214	27	25	136	14	30	112	10	9	68	17
Total Analysis Volume [veh/h]	38	855	110	101	544	57	120	449	39	37	271	68
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]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	0	10	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	49	0	0	49	0	0	41	0	0	41	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	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	28	0	0	21	0	0	24	0	0	24	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	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	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	C	C	L	C	C	L	C	C	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]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	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	2.00
g_i, Effective Green Time [s]	58	58	58	58	58	58	24	24	24	24	24
g / C, Green / Cycle	0.64	0.64	0.64	0.64	0.64	0.64	0.27	0.27	0.27	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.05	0.18	0.18	0.17	0.11	0.11	0.12	0.13	0.13	0.13	0.12
s, saturation flow rate [veh/h]	818	3560	1763	582	3560	1781	1041	1870	1818	1352	1605
c, Capacity [veh/h]	544	2279	1128	390	2279	1140	236	507	493	415	435
d1, Uniform Delay [s]	8.86	7.12	7.13	11.92	6.57	6.58	36.73	27.54	27.56	26.52	27.30
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	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	1.00
d2, Incremental Delay [s]	0.25	0.31	0.63	1.61	0.17	0.34	1.68	0.73	0.75	0.69	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	0.07	0.28	0.28	0.26	0.18	0.18	0.51	0.49	0.49	0.42	0.46
d, Delay for Lane Group [s/veh]	9.11	7.43	7.76	13.53	6.74	6.92	38.41	28.27	28.31	27.21	28.06
Lane Group LOS	A	A	A	B	A	A	D	C	C	C	C
Critical Lane Group	No	No	Yes	No	No	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.35	2.50	2.59	1.25	1.42	1.50	2.60	4.47	4.37	3.07	3.59
50th-Percentile Queue Length [ft/ln]	8.83	62.38	64.71	31.21	35.55	37.43	65.09	111.81	109.28	76.74	89.85
95th-Percentile Queue Length [veh/ln]	0.64	4.49	4.66	2.25	2.56	2.70	4.69	7.94	7.80	5.52	6.47
95th-Percentile Queue Length [ft/ln]	15.90	112.28	116.48	56.19	63.99	67.38	117.17	198.52	194.99	138.12	161.73

Movement, Approach, & Intersection Results

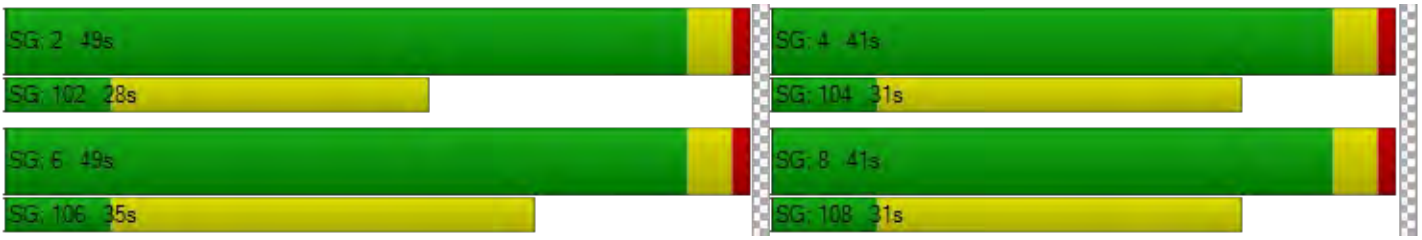
d_M, Delay for Movement [s/veh]	9.11	7.51	7.76	13.53	6.79	6.92	38.41	28.29	28.31	27.21	27.62	28.06
Movement LOS	A	A	A	B	A	A	D	C	C	C	C	C
d_A, Approach Delay [s/veh]	7.60			7.77			30.29			27.66		
Approach LOS	A			A			C			C		
d_I, Intersection Delay [s/veh]	15.58											
Intersection LOS	B											
Intersection V/C	0.345											

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]	34.67	34.67	34.67	34.67
l_p,int, Pedestrian LOS Score for Intersection	2.872	3.007	2.543	2.527
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1000	1000	822	822
d_b, Bicycle Delay [s]	11.25	11.25	15.61	15.61
l_b,int, Bicycle LOS Score for Intersection	2.111	1.946	2.061	1.870
Bicycle LOS	B	A	B	A

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



APPENDIX B-IV

YEAR 2029 CUMULATIVE PLUS PROJECT TRAFFIC CONDITIONS

Intersection Level Of Service Report
Intersection 1: Lakewood Boulevard at Carson Street

Control Type:	Signalized	Delay (sec / veh):	35.4
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.669

Intersection Setup

Name	Lakewood Boulevard			Lakewood Boulevard			Carson Street			Carson 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	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	Lakewood Boulevard			Lakewood Boulevard			Carson Street			Carson Street		
Base Volume Input [veh/h]	196	535	176	156	1412	192	93	897	233	299	766	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	196	535	176	156	1412	192	93	897	233	299	766	28
Peak Hour Factor	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560
Other Adjustment Factor	1.0000	1.0000	1.0000	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	140	46	41	369	50	24	235	61	78	200	7
Total Analysis Volume [veh/h]	205	560	184	163	1477	201	97	938	244	313	801	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	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	1	6	6	5	2	0	3	8	8	7	4	0
Auxiliary Signal Groups			6,7						1,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	10	10	6	10	0	6	10	10	6	10	0
Maximum Green [s]	30	30	30	30	30	0	30	30	30	30	30	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	12	39	39	18	45	0	11	46	46	17	52	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	28	28	0	31	0	0	35	35	0	28	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	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No	No	No	No	
Maximum Recall	No	No	No	No	No		No	No	No	No	No	
Pedestrian Recall	No	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	R	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	0.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	52	68	13	56	56	6	27	39	13	34	34
g / C, Green / Cycle	0.07	0.43	0.57	0.11	0.47	0.47	0.05	0.22	0.32	0.11	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.06	0.11	0.12	0.09	0.25	0.25	0.03	0.18	0.15	0.09	0.15	0.15
s, saturation flow rate [veh/h]	3459	5094	1589	1781	5094	1726	3459	5094	1589	3459	3560	1837
c, Capacity [veh/h]	233	2188	905	191	2390	810	169	1139	515	369	1002	517
d1, Uniform Delay [s]	55.51	21.95	12.58	52.69	22.43	22.43	55.88	44.36	32.39	52.68	36.64	36.64
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.17	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	1.00	1.00
d2, Incremental Delay [s]	10.29	0.28	0.51	10.38	0.83	2.42	3.06	1.57	1.05	5.47	0.47	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
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	0.26	0.20	0.86	0.52	0.52	0.57	0.82	0.47	0.85	0.55	0.55
d, Delay for Lane Group [s/veh]	65.80	22.23	13.09	63.07	23.26	24.86	58.94	45.93	33.44	58.15	37.10	37.55
Lane Group LOS	E	C	B	E	C	C	E	D	C	E	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.41	3.44	2.51	5.38	8.38	8.88	1.51	8.98	5.82	4.91	6.88	7.17
50th-Percentile Queue Length [ft/ln]	85.20	85.94	62.80	134.39	209.47	221.95	37.78	224.57	145.45	122.77	172.03	179.23
95th-Percentile Queue Length [veh/ln]	6.13	6.19	4.52	9.18	13.13	13.76	2.72	13.90	9.77	8.55	11.18	11.56
95th-Percentile Queue Length [ft/ln]	153.37	154.69	113.04	229.45	328.14	344.11	68.00	347.46	244.34	213.63	279.58	289.01

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	65.80	22.23	13.09	63.07	23.50	24.86	58.94	45.93	33.44	58.15	37.24	37.55
Movement LOS	E	C	B	E	C	C	E	D	C	E	D	D
d_A, Approach Delay [s/veh]	29.87			27.15			44.54			42.98		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	35.38											
Intersection LOS	D											
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]	49.52	49.52	49.52	49.52
l_p,int, Pedestrian LOS Score for Intersection	3.271	3.047	3.132	3.035
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	700	800
d_b, Bicycle Delay [s]	30.12	26.02	25.36	21.61
l_b,int, Bicycle LOS Score for Intersection	2.082	2.319	2.263	2.188
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: Faculty Avenue at Carson Street

Control Type:	Two-way stop	Delay (sec / veh):	45.0
Analysis Method:	HCM 7th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.231

Intersection Setup

Name	Faculty Avenue		Carson Street		Carson Street	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		40.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Faculty Avenue		Carson Street		Carson Street	
Base Volume Input [veh/h]	32	126	108	1019	1008	76
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	32	126	108	1019	1008	76
Peak Hour Factor	0.9140	0.9140	0.9140	0.9140	0.9140	0.9140
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	34	30	279	276	21
Total Analysis Volume [veh/h]	35	138	118	1115	1103	83
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

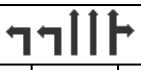
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.23	0.36	0.20	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	45.05	30.62	12.71	0.00	0.00	0.00
Movement LOS	E	D	B	A	A	A
95th-Percentile Queue Length [veh/ln]	3.50	3.50	0.75	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	87.58	87.58	18.73	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	33.54		1.22		0.00	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	2.82					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 3: Clark Avenue at Carson Street

Control Type:	Signalized	Delay (sec / veh):	29.8
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.769

Intersection Setup

Name	Clark Avenue			Clark Avenue			Carson Street			Carson 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	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	Clark Avenue			Clark Avenue			Carson Street			Carson Street		
Base Volume Input [veh/h]	73	342	103	1	36	4	66	717	316	409	888	107
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	73	342	103	1	36	4	66	717	316	409	888	107
Peak Hour Factor	0.7340	0.7340	0.7340	0.7340	0.7340	0.7340	0.7340	0.7340	0.7340	0.7340	0.7340	0.7340
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	116	35	0	12	1	22	244	108	139	302	36
Total Analysis Volume [veh/h]	99	466	140	1	49	5	90	977	431	557	1210	146
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	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	3	8	8	7	4	0	5	2	2	1	6	0
Auxiliary Signal Groups			1,8						2,3			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	10	10	6	10	0	6	10	10	6	10	0
Maximum Green [s]	30	30	30	30	30	0	30	30	30	30	30	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	12	41	41	10	39	0	11	35	35	24	48	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	28	28	0	28	0	0	24	24	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]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No	No	No	No	
Maximum Recall	No	No	No	No	No		No	No	No	No	No	
Pedestrian Recall	No	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	R	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	0.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	30	54	0	22	22	7	44	56	20	57	57
g / C, Green / Cycle	0.07	0.27	0.49	0.00	0.20	0.20	0.06	0.40	0.51	0.18	0.52	0.52
(v / s)_i Volume / Saturation Flow Rate	0.03	0.25	0.05	0.00	0.01	0.01	0.05	0.19	0.27	0.16	0.25	0.26
s, saturation flow rate [veh/h]	3459	1870	2813	3459	1870	1811	1781	5094	1589	3459	3560	1769
c, Capacity [veh/h]	254	509	1369	9	376	364	115	2046	813	617	1836	912
d1, Uniform Delay [s]	48.65	38.87	15.27	54.77	35.64	35.66	50.75	24.38	18.02	44.31	17.31	17.34
k, delay calibration	0.11	0.20	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]	0.97	11.74	0.03	4.90	0.08	0.09	11.10	0.80	2.47	5.26	0.95	1.92
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	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	0.92	0.10	0.11	0.07	0.07	0.78	0.48	0.53	0.90	0.49	0.50
d, Delay for Lane Group [s/veh]	49.63	50.61	15.31	59.67	35.72	35.74	61.85	25.18	20.49	49.57	18.26	19.26
Lane Group LOS	D	D	B	E	D	D	E	C	C	D	B	B
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.33	13.68	0.95	0.02	0.60	0.60	2.79	6.35	7.68	7.83	7.45	7.70
50th-Percentile Queue Length [ft/ln]	33.28	342.02	23.76	0.50	14.99	14.95	69.81	158.77	191.92	195.86	186.34	192.59
95th-Percentile Queue Length [veh/ln]	2.40	19.75	1.71	0.04	1.08	1.08	5.03	10.48	12.22	12.42	11.93	12.26
95th-Percentile Queue Length [ft/ln]	59.91	493.67	42.76	0.91	26.98	26.90	125.65	262.10	305.52	310.62	298.28	306.39

Movement, Approach, & Intersection Results

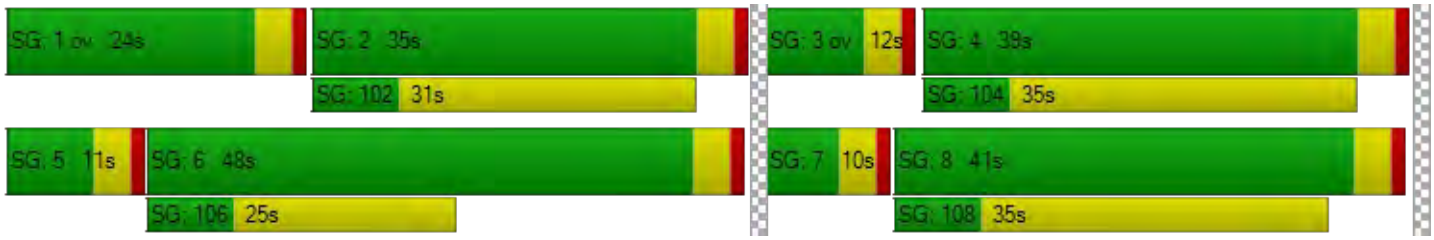
d_M, Delay for Movement [s/veh]	49.63	50.61	15.31	59.67	35.73	35.74	61.85	25.18	20.49	49.57	18.51	19.26
Movement LOS	D	D	B	E	D	D	E	C	C	D	B	B
d_A, Approach Delay [s/veh]	43.46			36.17			26.03			27.61		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	29.84											
Intersection LOS	C											
Intersection V/C	0.769											

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	2.846	2.457	3.078	3.104
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	563	800
d_b, Bicycle Delay [s]	24.25	25.59	28.39	19.82
l_b,int, Bicycle LOS Score for Intersection	2.723	1.605	2.384	2.612
Bicycle LOS	B	A	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 4: Bellflower Boulevard at Carson Street

Control Type:	Signalized	Delay (sec / veh):	39.2
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.734

Intersection Setup

Name	Bellflower Boulevard			Bellflower Boulevard			Carson Street			Carson 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	Bellflower Boulevard			Bellflower Boulevard			Carson Street			Carson Street		
Base Volume Input [veh/h]	109	603	133	222	907	67	134	665	102	168	1029	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	109	603	133	222	907	67	134	665	102	168	1029	122
Peak Hour Factor	0.9820	0.9820	0.9820	0.9820	0.9820	0.9820	0.9820	0.9820	0.9820	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]	28	154	34	57	231	17	34	169	26	43	262	31
Total Analysis Volume [veh/h]	111	614	135	226	924	68	136	677	104	171	1048	124
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	10	0	6	10	0	6	10	0	6	10	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	35	0	24	47	0	14	35	0	16	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	24	0	0	24	0	0	24	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]	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	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]	8	25	25	16	33	33	10	41	41	12	43	43
g / C, Green / Cycle	0.07	0.23	0.23	0.14	0.30	0.30	0.09	0.38	0.38	0.11	0.39	0.39
(v / s)_i Volume / Saturation Flow Rate	0.06	0.17	0.08	0.13	0.27	0.27	0.08	0.15	0.15	0.10	0.22	0.22
s, saturation flow rate [veh/h]	1781	3560	1589	1781	1870	1825	1781	3560	1746	1781	3560	1770
c, Capacity [veh/h]	131	803	359	258	556	542	163	1333	654	195	1398	695
d1, Uniform Delay [s]	50.40	39.89	36.07	46.10	37.17	37.19	49.19	25.24	25.28	48.28	26.03	26.04
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]	13.86	1.55	0.65	9.13	11.15	11.53	10.52	0.87	1.79	11.63	1.63	3.24
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	0.85	0.76	0.38	0.88	0.90	0.90	0.83	0.39	0.40	0.88	0.56	0.56
d, Delay for Lane Group [s/veh]	64.26	41.44	36.73	55.23	48.32	48.72	59.71	26.11	27.07	59.91	27.66	29.28
Lane Group LOS	E	D	D	E	D	D	E	C	C	E	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.52	7.89	3.13	6.68	14.48	14.21	4.14	5.12	5.25	5.24	8.17	8.44
50th-Percentile Queue Length [ft/ln]	87.91	197.17	78.32	166.91	361.94	355.36	103.56	128.11	131.16	130.89	204.27	211.05
95th-Percentile Queue Length [veh/ln]	6.33	12.49	5.64	10.91	20.72	20.40	7.46	8.84	9.00	8.99	12.86	13.21
95th-Percentile Queue Length [ft/ln]	158.23	312.31	140.98	272.85	517.94	509.94	186.41	220.93	225.07	224.70	321.47	330.18

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	64.26	41.44	36.73	55.23	48.50	48.72	59.71	26.33	27.07	59.91	28.07	29.28
Movement LOS	E	D	D	E	D	D	E	C	C	E	C	C
d_A, Approach Delay [s/veh]	43.64			49.76			31.37			32.24		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	39.23											
Intersection LOS	D											
Intersection V/C	0.734											

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	2.797	2.717	2.902	2.935
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]	563	781	563	600
d_b, Bicycle Delay [s]	28.39	20.43	28.39	26.97
l_b,int, Bicycle LOS Score for Intersection	2.269	2.564	2.064	2.298
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 5: Clark Avenue at Lew Davis Street

Control Type:	Signalized	Delay (sec / veh):	2.7
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.309

Intersection Setup

Name	Clark Avenue		Clark Avenue		Lew Davis Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	Clark Avenue		Clark Avenue		Lew Davis Street	
Base Volume Input [veh/h]	120	735	518	127	30	9
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	120	735	518	127	30	9
Peak Hour Factor	0.7950	0.7950	0.7950	0.7950	0.7950	0.7950
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	38	231	163	40	9	3
Total Analysis Volume [veh/h]	151	925	652	160	38	11
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	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	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	0	6	2	0	3	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	0	10	10	0	6	0
Maximum Green [s]	0	30	30	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	1.0	0.0
Split [s]	0	58	58	0	32	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	7	7	0	7	0
Pedestrian Clearance [s]	0	14	14	0	21	0
Delayed Vehicle Green [s]	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	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	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
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	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	C	L	R
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]	2.00	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]	78	78	78	78	4	4
g / C, Green / Cycle	0.86	0.86	0.86	0.86	0.05	0.05
(v / s)_i Volume / Saturation Flow Rate	0.22	0.26	0.22	0.23	0.02	0.01
s, saturation flow rate [veh/h]	672	3560	1870	1748	1781	1589
c, Capacity [veh/h]	611	3072	1614	1509	86	76
d1, Uniform Delay [s]	2.57	1.14	1.08	1.10	41.63	41.02
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.97	0.25	0.37	0.44	3.57	0.85
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	0.25	0.30	0.25	0.27	0.44	0.14
d, Delay for Lane Group [s/veh]	3.53	1.39	1.45	1.54	45.20	41.88
Lane Group LOS	A	A	A	A	D	D
Critical Lane Group	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.62	0.44	0.44	0.46	0.90	0.25
50th-Percentile Queue Length [ft/ln]	15.57	10.92	11.03	11.56	22.43	6.24
95th-Percentile Queue Length [veh/ln]	1.12	0.79	0.79	0.83	1.61	0.45
95th-Percentile Queue Length [ft/ln]	28.02	19.65	19.85	20.81	40.37	11.24

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	3.53	1.39	1.49	1.54	45.20	41.88
Movement LOS	A	A	A	A	D	D
d_A, Approach Delay [s/veh]	1.69		1.50		44.45	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	2.69					
Intersection LOS	A					
Intersection V/C	0.309					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.65	0.00	34.65
l_p,int, Pedestrian LOS Score for Intersection	2.638	0.000	2.271
Crosswalk LOS	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1201	1201	623
d_b, Bicycle Delay [s]	7.19	7.19	21.34
l_b,int, Bicycle LOS Score for Intersection	2.447	2.230	1.560
Bicycle LOS	B	B	A

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 6: Lakewood Boulevard at Conant Street

Control Type:	Signalized	Delay (sec / veh):	25.0
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.723

Intersection Setup

Name	Lakewood Boulevard			Lakewood Boulevard			Conant Street			Conant 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	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	No			Yes			Yes			Yes		

Volumes

Name	Lakewood Boulevard			Lakewood Boulevard			Conant Street			Conant Street		
Base Volume Input [veh/h]	406	1129	230	107	1494	127	17	85	236	35	169	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	406	1129	230	107	1494	127	17	85	236	35	169	82
Peak Hour Factor	0.8580	0.8580	0.8580	0.8580	0.8580	0.8580	0.8580	0.8580	0.8580	0.8580	0.8580	0.8580
Other Adjustment Factor	1.0000	1.0000	1.0000	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	329	67	31	435	37	5	25	69	10	49	24
Total Analysis Volume [veh/h]	473	1316	268	125	1741	148	20	99	275	41	197	96
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	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	6	10	0	0	10	0	6	10	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	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	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	29	50	0	11	32	0	0	22	0	17	39	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	21	0	0	0	0	0	28	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	2.0	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	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	L	C	C	L	C	R	L	C	R
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	2.00	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	0.00	2.00	2.00
g_i, Effective Green Time [s]	16	58	58	6	48	48	16	16	16	24	24	24
g / C, Green / Cycle	0.16	0.58	0.58	0.06	0.48	0.48	0.16	0.16	0.16	0.24	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.14	0.26	0.17	0.04	0.35	0.35	0.02	0.05	0.10	0.03	0.11	0.06
s, saturation flow rate [veh/h]	3459	5094	1589	3459	3560	1796	1086	1870	2813	1208	1870	1589
c, Capacity [veh/h]	567	2961	924	204	1696	855	122	295	444	347	449	381
d1, Uniform Delay [s]	40.53	11.84	10.56	45.99	21.20	21.26	46.42	37.49	39.35	29.74	32.34	30.79
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	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	1.00	1.00
d2, Incremental Delay [s]	3.29	0.49	0.79	2.95	2.93	5.80	0.63	0.66	1.41	0.15	0.68	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	0.83	0.44	0.29	0.61	0.74	0.74	0.16	0.34	0.62	0.12	0.44	0.25
d, Delay for Lane Group [s/veh]	43.82	12.32	11.35	48.95	24.13	27.06	47.05	38.15	40.76	29.89	33.01	31.13
Lane Group LOS	D	B	B	D	C	C	D	D	D	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.84	5.30	3.02	1.59	11.96	12.85	0.50	2.20	3.21	0.78	4.10	1.90
50th-Percentile Queue Length [ft/ln]	145.96	132.46	75.47	39.84	298.96	321.20	12.57	54.98	80.35	19.52	102.62	47.54
95th-Percentile Queue Length [veh/ln]	9.80	9.07	5.43	2.87	17.63	18.73	0.90	3.96	5.79	1.41	7.39	3.42
95th-Percentile Queue Length [ft/ln]	245.02	226.84	135.85	71.71	440.74	468.16	22.62	98.97	144.63	35.13	184.72	85.58

Movement, Approach, & Intersection Results

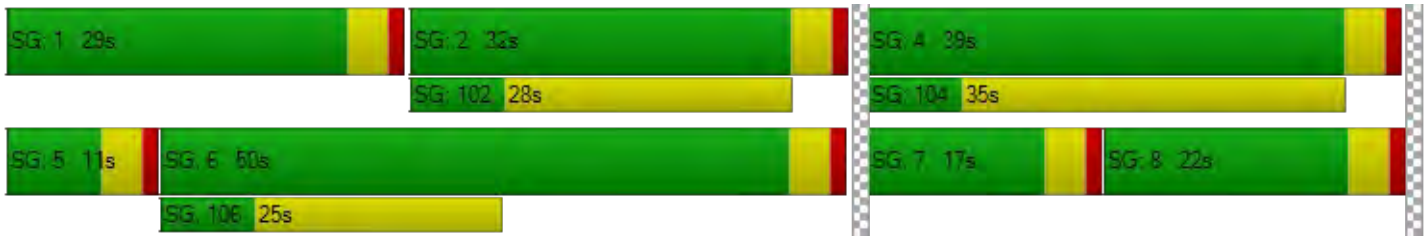
d_M, Delay for Movement [s/veh]	43.82	12.32	11.35	48.95	24.95	27.06	47.05	38.15	40.76	29.89	33.01	31.13
Movement LOS	D	B	B	D	C	C	D	D	D	C	C	C
d_A, Approach Delay [s/veh]	19.44			26.60			40.42			32.09		
Approach LOS	B			C			D			C		
d_I, Intersection Delay [s/veh]	25.05											
Intersection LOS	C											
Intersection V/C	0.723											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	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]	0.00	39.64	39.64	39.64
l_p,int, Pedestrian LOS Score for Intersection	0.000	3.179	2.655	2.466
Crosswalk LOS	F	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	919	560	360	700
d_b, Bicycle Delay [s]	14.61	25.95	33.65	21.16
l_b,int, Bicycle LOS Score for Intersection	2.691	2.667	2.210	2.111
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 7: Faculty Avenue at Conant Street

Control Type:	Signalized	Delay (sec / veh):	2.3
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.263

Intersection Setup

Name	Faculty Avenue		Conant Street		Conant Street	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Faculty Avenue		Conant Street		Conant Street	
Base Volume Input [veh/h]	1	15	234	146	265	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	15	234	146	265	30
Peak Hour Factor	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	4	61	38	70	8
Total Analysis Volume [veh/h]	1	16	246	153	278	31
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	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	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	7	0	0	2	6	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	6	0	0	10	10	0
Maximum Green [s]	30	0	0	30	30	0
Amber [s]	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	29	0	0	61	61	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	7	0	0	7	7	0
Pedestrian Clearance [s]	18	0	0	11	11	0
Delayed Vehicle Green [s]	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	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	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
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	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
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	2.00	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]	2	2	80	80	80	80
g / C, Green / Cycle	0.02	0.02	0.89	0.89	0.89	0.89
(v / s)_i Volume / Saturation Flow Rate	0.00	0.01	0.23	0.04	0.08	0.09
s, saturation flow rate [veh/h]	1781	1589	1070	3560	1870	1806
c, Capacity [veh/h]	43	38	985	3158	1658	1602
d1, Uniform Delay [s]	42.83	43.24	1.39	0.60	0.63	0.63
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]	0.21	7.02	0.61	0.03	0.11	0.12
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	0.02	0.42	0.25	0.05	0.09	0.10
d, Delay for Lane Group [s/veh]	43.05	50.26	2.00	0.63	0.74	0.75
Lane Group LOS	D	D	A	A	A	A
Critical Lane Group	No	Yes	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	0.02	0.42	0.49	0.01	0.05	0.05
50th-Percentile Queue Length [ft/ln]	0.60	10.57	12.34	0.32	1.28	1.33
95th-Percentile Queue Length [veh/ln]	0.04	0.76	0.89	0.02	0.09	0.10
95th-Percentile Queue Length [ft/ln]	1.08	19.02	22.21	0.57	2.31	2.40

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	43.05	50.26	2.00	0.63	0.74	0.75
Movement LOS	D	D	A	A	A	A
d_A, Approach Delay [s/veh]	49.84		1.47		0.74	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	2.30					
Intersection LOS	A					
Intersection V/C	0.263					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.65	34.65	34.65
l_p,int, Pedestrian LOS Score for Intersection	2.385	2.434	2.243
Crosswalk LOS	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	556	1267	1267
d_b, Bicycle Delay [s]	23.45	6.04	6.04
l_b,int, Bicycle LOS Score for Intersection	1.560	1.889	1.815
Bicycle LOS	A	A	A

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 8: Clark Avenue at Conant Street

Control Type:	Signalized	Delay (sec / veh):	10.1
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.496

Intersection Setup

Name	Clark Avenue			Clark Avenue			Conant Street			Conant 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	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			Yes			Yes		

Volumes

Name	Clark Avenue			Clark Avenue			Conant Street			Conant Street		
Base Volume Input [veh/h]	175	748	16	7	443	67	38	19	69	35	84	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
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	748	16	7	443	67	38	19	69	35	84	29
Peak Hour Factor	0.7190	0.7190	0.7190	0.7190	0.7190	0.7190	0.7190	0.7190	0.7190	0.7190	0.7190	0.7190
Other Adjustment Factor	1.0000	1.0000	1.0000	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	260	6	2	154	23	13	7	24	12	29	10
Total Analysis Volume [veh/h]	243	1040	22	10	616	93	53	26	96	49	117	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]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	0	10	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	32	0	0	32	0	0	58	0	0	58	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	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	21	0	0	18	0	0	21	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	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	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	C	C	L	C	C	L	C	R	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]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	2.00
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]	69	69	69	69	69	69	13	13	13	13
g / C, Green / Cycle	0.77	0.77	0.77	0.77	0.77	0.77	0.15	0.15	0.15	0.15
(v / s)_i Volume / Saturation Flow Rate	0.33	0.28	0.29	0.02	0.19	0.19	0.04	0.01	0.06	0.12
s, saturation flow rate [veh/h]	740	1870	1856	531	1870	1785	1229	1870	1589	1664
c, Capacity [veh/h]	580	1432	1421	419	1432	1367	91	272	231	291
d1, Uniform Delay [s]	7.04	3.45	3.45	6.03	3.06	3.06	36.84	33.28	34.92	37.33
k, delay calibration	0.50	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]	2.22	0.74	0.75	0.11	0.43	0.45	5.75	0.15	1.19	3.15
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	0.37	0.37	0.02	0.25	0.25	0.58	0.10	0.42	0.71
d, Delay for Lane Group [s/veh]	9.26	4.19	4.20	6.13	3.48	3.51	42.60	33.43	36.12	40.48
Lane Group LOS	A	A	A	A	A	A	D	C	D	D
Critical Lane Group	Yes	No	No	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.25	2.51	2.50	0.08	1.51	1.45	1.24	0.50	1.96	4.59
50th-Percentile Queue Length [ft/ln]	56.22	62.85	62.53	1.88	37.67	36.30	31.09	12.45	49.04	114.71
95th-Percentile Queue Length [veh/ln]	4.05	4.53	4.50	0.14	2.71	2.61	2.24	0.90	3.53	8.10
95th-Percentile Queue Length [ft/ln]	101.19	113.14	112.55	3.39	67.80	65.34	55.97	22.41	88.28	202.53

Movement, Approach, & Intersection Results

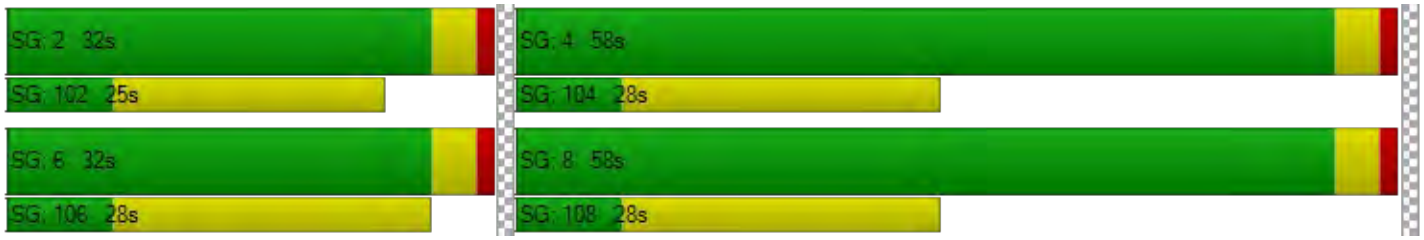
d_M, Delay for Movement [s/veh]	9.26	4.19	4.20	6.13	3.49	3.51	42.60	33.43	36.12	40.48	40.48	40.48
Movement LOS	A	A	A	A	A	A	D	C	D	D	D	D
d_A, Approach Delay [s/veh]	5.14			3.53			37.68			40.48		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	10.05											
Intersection LOS	B											
Intersection V/C	0.496											

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]	34.63	34.63	34.63	34.63
l_p,int, Pedestrian LOS Score for Intersection	2.772	2.736	2.900	2.209
Crosswalk LOS	C	B	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	623	623	1201	1201
d_b, Bicycle Delay [s]	21.32	21.32	7.17	7.17
l_b,int, Bicycle LOS Score for Intersection	2.636	2.153	1.848	1.900
Bicycle LOS	B	B	A	A

Sequence

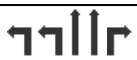
Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 9: Lakewood Boulevard at Wardlow Road

Control Type:	Signalized	Delay (sec / veh):	31.1
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.669

Intersection Setup

Name	Lakewood Boulevard			Lakewood Boulevard			Wardlow Road			Wardlow 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	0	1	0	0	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	Lakewood Boulevard			Lakewood Boulevard			Wardlow Road			Wardlow Road		
Base Volume Input [veh/h]	306	1600	166	201	1340	85	50	25	23	378	93	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	306	1600	166	201	1340	85	50	25	23	378	93	236
Peak Hour Factor	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270	0.8270
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	93	484	50	61	405	26	15	8	7	114	28	71
Total Analysis Volume [veh/h]	370	1935	201	243	1620	103	60	30	28	457	112	285
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	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	10	0	6	10	0	6	10	0	6	10	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	40	0	13	35	0	10	46	0	21	57	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	24	0	0	24	0	0	35	0	0	35	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	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]	14	66	66	9	61	61	5	12	12	17	24	24
g / C, Green / Cycle	0.12	0.55	0.55	0.08	0.51	0.51	0.04	0.10	0.10	0.14	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.11	0.31	0.31	0.07	0.25	0.25	0.02	0.01	0.02	0.13	0.03	0.18
s, saturation flow rate [veh/h]	3459	5094	1757	3459	5094	1797	3459	3560	1589	3459	3560	1589
c, Capacity [veh/h]	405	2785	961	262	2574	908	152	364	163	491	713	318
d1, Uniform Delay [s]	52.40	17.91	17.95	55.17	19.59	19.59	55.83	48.79	49.25	50.92	39.65	46.79
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	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	1.00	1.00
d2, Incremental Delay [s]	8.34	0.85	2.48	13.61	0.68	1.92	1.65	0.10	0.50	8.36	0.10	8.82
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	0.91	0.57	0.57	0.93	0.49	0.49	0.39	0.08	0.17	0.93	0.16	0.90
d, Delay for Lane Group [s/veh]	60.74	18.76	20.42	68.78	20.27	21.51	57.47	48.89	49.74	59.28	39.75	55.61
Lane Group LOS	E	B	C	E	C	C	E	D	D	E	D	E
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	5.97	9.59	10.42	4.15	7.85	8.63	0.92	0.41	0.79	7.34	1.39	9.04
50th-Percentile Queue Length [ft/ln]	149.29	239.64	260.55	103.67	196.31	215.63	23.01	10.36	19.84	183.61	34.64	226.00
95th-Percentile Queue Length [veh/ln]	9.98	14.66	15.72	7.46	12.45	13.44	1.66	0.75	1.43	11.79	2.49	13.97
95th-Percentile Queue Length [ft/ln]	249.48	366.58	392.91	186.60	311.20	336.04	41.41	18.64	35.72	294.72	62.34	349.27

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	60.74	19.06	20.42	68.78	20.54	21.51	57.47	48.89	49.74	59.28	39.75	55.61
Movement LOS	E	B	C	E	C	C	E	D	D	E	D	E
d_A, Approach Delay [s/veh]	25.32			26.55			53.46			55.49		
Approach LOS	C			C			D			E		
d_I, Intersection Delay [s/veh]	31.11											
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]	49.52	49.52	49.52	49.52
l_p,int, Pedestrian LOS Score for Intersection	3.430	3.394	2.939	2.793
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]	600	517	700	883
d_b, Bicycle Delay [s]	29.41	33.02	25.36	18.72
l_b,int, Bicycle LOS Score for Intersection	2.593	2.371	1.657	2.264
Bicycle LOS	B	B	A	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 10: Clark Avenue at Wardlow Avenue

Control Type:	Signalized	Delay (sec / veh):	19.5
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.483

Intersection Setup

Name	Clark Avenue			Clark Avenue			Wardlow Avenue			Wardlow Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	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	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			Yes			Yes		

Volumes

Name	Clark Avenue			Clark Avenue			Wardlow Avenue			Wardlow Avenue		
Base Volume Input [veh/h]	53	706	80	69	418	87	65	273	42	91	579	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	53	706	80	69	418	87	65	273	42	91	579	138
Peak Hour Factor	0.9280	0.9280	0.9280	0.9280	0.9280	0.9280	0.9280	0.9280	0.9280	0.9280	0.9280	0.9280
Other Adjustment Factor	1.0000	1.0000	1.0000	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	190	22	19	113	23	18	74	11	25	156	37
Total Analysis Volume [veh/h]	57	761	86	74	450	94	70	294	45	98	624	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]	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	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	0	10	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	39	0	0	39	0	0	61	0	0	61	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	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	28	0	0	21	0	0	24	0	0	24	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	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	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	C	C	L	C	C	L	C	C	C	C
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]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	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	2.00
g_i, Effective Green Time [s]	51	51	51	51	51	51	41	41	41	41	41
g / C, Green / Cycle	0.51	0.51	0.51	0.51	0.51	0.51	0.41	0.41	0.41	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.07	0.16	0.16	0.11	0.10	0.11	0.10	0.09	0.09	0.28	0.28
s, saturation flow rate [veh/h]	862	3560	1775	650	3560	1712	697	1870	1785	1478	1608
c, Capacity [veh/h]	462	1824	909	344	1824	877	160	762	728	647	655
d1, Uniform Delay [s]	16.07	14.12	14.14	19.05	13.24	13.28	42.36	19.32	19.35	25.21	24.36
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	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	1.00
d2, Incremental Delay [s]	0.55	0.44	0.89	1.42	0.25	0.53	1.86	0.15	0.16	1.11	1.29
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
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	0.12	0.31	0.31	0.21	0.20	0.21	0.44	0.23	0.23	0.65	0.69
d, Delay for Lane Group [s/veh]	16.62	14.56	15.03	20.48	13.49	13.81	44.22	19.47	19.51	26.32	25.65
Lane Group LOS	B	B	B	C	B	B	D	B	B	C	C
Critical Lane Group	No	No	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.82	3.69	3.82	1.25	2.23	2.28	1.74	2.60	2.53	8.39	8.70
50th-Percentile Queue Length [ft/ln]	20.61	92.24	95.60	31.13	55.68	56.96	43.59	65.00	63.15	209.80	217.53
95th-Percentile Queue Length [veh/ln]	1.48	6.64	6.88	2.24	4.01	4.10	3.14	4.68	4.55	13.14	13.54
95th-Percentile Queue Length [ft/ln]	37.10	166.03	172.08	56.03	100.22	102.53	78.47	117.00	113.67	328.57	338.47

Movement, Approach, & Intersection Results

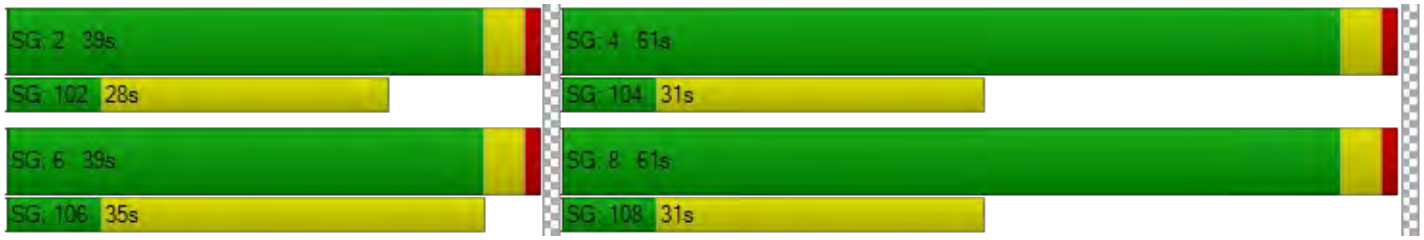
d_M, Delay for Movement [s/veh]	16.62	14.69	15.03	20.48	13.55	13.81	44.22	19.49	19.51	26.32	26.00	25.65
Movement LOS	B	B	B	C	B	B	D	B	B	C	C	C
d_A, Approach Delay [s/veh]	14.84			14.42			23.72			25.98		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	19.51											
Intersection LOS	B											
Intersection V/C	0.483											

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]	39.60	39.60	39.60	39.60
l_p,int, Pedestrian LOS Score for Intersection	2.947	2.921	2.617	2.564
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	700	700	1140	1140
d_b, Bicycle Delay [s]	21.12	21.12	9.24	9.24
l_b,int, Bicycle LOS Score for Intersection	2.057	1.900	1.897	2.278
Bicycle LOS	B	A	A	B

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 1: Lakewood Boulevard at Carson Street

Control Type:	Signalized	Delay (sec / veh):	36.4
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.636

Intersection Setup

Name	Lakewood Boulevard			Lakewood Boulevard			Carson Street			Carson 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	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	Lakewood Boulevard			Lakewood Boulevard			Carson Street			Carson Street		
Base Volume Input [veh/h]	287	1179	306	87	688	104	355	986	225	230	691	81
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	287	1179	306	87	688	104	355	986	225	230	691	81
Peak Hour Factor	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810	0.9810
Other Adjustment Factor	1.0000	1.0000	1.0000	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	300	78	22	175	27	90	251	57	59	176	21
Total Analysis Volume [veh/h]	293	1202	312	89	701	106	362	1005	229	234	704	83
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	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	1	6	6	5	2	0	3	8	8	7	4	0
Auxiliary Signal Groups			6,7						1,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	10	10	6	10	0	6	10	10	6	10	0
Maximum Green [s]	30	30	30	30	30	0	30	30	30	30	30	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	16	47	47	11	42	0	23	47	47	15	39	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	28	28	0	31	0	0	35	35	0	28	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	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No	No	No	No	
Maximum Recall	No	No	No	No	No		No	No	No	No	No	
Pedestrian Recall	No	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	R	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	0.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	57	72	7	52	52	15	29	45	11	25	25
g / C, Green / Cycle	0.10	0.48	0.60	0.06	0.44	0.44	0.12	0.24	0.37	0.09	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.08	0.24	0.20	0.05	0.12	0.12	0.10	0.20	0.14	0.07	0.15	0.15
s, saturation flow rate [veh/h]	3459	5094	1589	1781	5094	1715	3459	5094	1589	3459	3560	1771
c, Capacity [veh/h]	348	2434	959	105	2222	748	428	1211	591	319	734	365
d1, Uniform Delay [s]	53.06	21.43	11.76	55.95	21.63	21.70	51.49	43.46	27.70	53.06	44.36	44.39
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.14	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	1.00	1.00
d2, Incremental Delay [s]	5.56	0.72	0.90	16.45	0.30	0.92	4.69	1.54	0.54	3.27	1.31	2.65
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	0.84	0.49	0.33	0.85	0.27	0.28	0.85	0.83	0.39	0.73	0.71	0.72
d, Delay for Lane Group [s/veh]	58.62	22.15	12.66	72.39	21.93	22.62	56.19	44.99	28.24	56.32	45.67	47.04
Lane Group LOS	E	C	B	E	C	C	E	D	C	E	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.61	7.77	4.25	3.15	3.66	3.93	5.60	9.58	4.93	3.58	7.39	7.53
50th-Percentile Queue Length [ft/ln]	115.21	194.24	106.26	78.76	91.61	98.31	140.10	239.42	123.14	89.55	184.77	188.24
95th-Percentile Queue Length [veh/ln]	8.13	12.34	7.63	5.67	6.60	7.08	9.49	14.65	8.57	6.45	11.85	12.03
95th-Percentile Queue Length [ft/ln]	203.22	308.53	190.79	141.77	164.90	176.95	237.16	366.30	214.13	161.20	296.24	300.75

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	58.62	22.15	12.66	72.39	22.02	22.62	56.19	44.99	28.24	56.32	46.02	47.04
Movement LOS	E	C	B	E	C	C	E	D	C	E	D	D
d_A, Approach Delay [s/veh]	26.42			27.10			45.13			48.46		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	36.38											
Intersection LOS	D											
Intersection V/C	0.636											

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	3.270	3.049	3.155	3.035
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	633	716	583
d_b, Bicycle Delay [s]	24.72	28.03	24.72	30.12
l_b,int, Bicycle LOS Score for Intersection	2.553	1.929	2.437	2.121
Bicycle LOS	B	A	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: Faculty Avenue at Carson Street

Control Type:	Two-way stop	Delay (sec / veh):	28.3
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.088

Intersection Setup

Name	Faculty Avenue		Carson Street		Carson Street	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		40.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Faculty Avenue		Carson Street		Carson Street	
Base Volume Input [veh/h]	15	74	98	1266	896	55
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	74	98	1266	896	55
Peak Hour Factor	0.9550	0.9550	0.9550	0.9550	0.9550	0.9550
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	19	26	331	235	14
Total Analysis Volume [veh/h]	16	77	103	1326	938	58
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

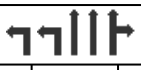
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.17	0.15	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	28.28	16.67	11.13	0.00	0.00	0.00
Movement LOS	D	C	B	A	A	A
95th-Percentile Queue Length [veh/ln]	1.03	1.03	0.52	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	25.75	25.75	13.06	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	18.67		0.80		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	1.14					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 3: Clark Avenue at Carson Street

Control Type:	Signalized	Delay (sec / veh):	30.9
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.689

Intersection Setup

Name	Clark Avenue			Clark Avenue			Carson Street			Carson 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	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	Clark Avenue			Clark Avenue			Carson Street			Carson Street		
Base Volume Input [veh/h]	135	554	332	89	434	89	102	1005	154	117	677	97
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	135	554	332	89	434	89	102	1005	154	117	677	97
Peak Hour Factor	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470	0.9470
Other Adjustment Factor	1.0000	1.0000	1.0000	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	146	88	23	115	23	27	265	41	31	179	26
Total Analysis Volume [veh/h]	143	585	351	94	458	94	108	1061	163	124	715	102
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	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	3	8	8	7	4	0	5	2	2	1	6	0
Auxiliary Signal Groups			1,8						2,3			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	10	10	6	10	0	6	10	10	6	10	0
Maximum Green [s]	30	30	30	30	30	0	30	30	30	30	30	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	11	50	50	10	49	0	16	35	35	10	29	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	7	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	28	28	0	28	0	0	24	24	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]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No		No	No	No	No	No	
Maximum Recall	No	No	No	No	No		No	No	No	No	No	
Pedestrian Recall	No	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	R	L	C	C
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	0.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	36	46	6	34	34	8	42	53	6	40	40
g / C, Green / Cycle	0.07	0.34	0.44	0.05	0.33	0.33	0.08	0.40	0.50	0.06	0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.04	0.31	0.12	0.03	0.15	0.15	0.06	0.21	0.10	0.04	0.15	0.15
s, saturation flow rate [veh/h]	3459	1870	2813	3459	1870	1761	1781	5094	1589	3459	3560	1754
c, Capacity [veh/h]	233	636	1228	188	612	576	137	2013	796	200	1340	660
d1, Uniform Delay [s]	47.68	33.29	19.08	48.31	28.04	28.07	47.69	24.29	14.60	48.38	24.15	24.18
k, delay calibration	0.11	0.25	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]	2.60	12.13	0.13	2.05	0.55	0.59	9.69	0.99	0.58	3.09	0.92	1.89
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	0.61	0.92	0.29	0.50	0.46	0.47	0.79	0.53	0.20	0.62	0.41	0.41
d, Delay for Lane Group [s/veh]	50.28	45.41	19.21	50.36	28.58	28.66	57.38	25.28	15.19	51.47	25.07	26.07
Lane Group LOS	D	D	B	D	C	C	E	C	B	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.90	16.08	2.74	1.25	5.69	5.40	3.14	6.77	2.25	1.67	5.10	5.25
50th-Percentile Queue Length [ft/ln]	47.50	401.88	68.58	31.20	142.15	135.08	78.39	169.33	56.25	41.73	127.59	131.24
95th-Percentile Queue Length [veh/ln]	3.42	22.65	4.94	2.25	9.60	9.22	5.64	11.04	4.05	3.00	8.81	9.01
95th-Percentile Queue Length [ft/ln]	85.49	566.27	123.45	56.16	239.92	230.38	141.10	276.04	101.25	75.11	220.21	225.19

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	50.28	45.41	19.21	50.36	28.61	28.66	57.38	25.28	15.19	51.47	25.31	26.07
Movement LOS	D	D	B	D	C	C	E	C	B	D	C	C
d_A, Approach Delay [s/veh]	37.53			31.78			26.65			28.84		
Approach LOS	D			C			C			C		
d_I, Intersection Delay [s/veh]	30.93											
Intersection LOS	C											
Intersection V/C	0.689											

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	2.855	2.588	3.011	3.031
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]	876	857	590	476
d_b, Bicycle Delay [s]	16.60	17.17	26.10	30.50
l_b,int, Bicycle LOS Score for Intersection	3.340	2.093	2.292	2.077
Bicycle LOS	C	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 4: Bellflower Boulevard at Carson Street

Control Type:	Signalized	Delay (sec / veh):	34.4
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.790

Intersection Setup

Name	Bellflower Boulevard			Bellflower Boulevard			Carson Street			Carson 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	Bellflower Boulevard			Bellflower Boulevard			Carson Street			Carson Street		
Base Volume Input [veh/h]	138	896	148	109	469	64	164	1154	103	131	699	150
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
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	896	148	109	469	64	164	1154	103	131	699	150
Peak Hour Factor	0.9360	0.9360	0.9360	0.9360	0.9360	0.9360	0.9360	0.9360	0.9360	0.9360	0.9360	0.9360
Other Adjustment Factor	1.0000	1.0000	1.0000	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	239	40	29	125	17	44	308	28	35	187	40
Total Analysis Volume [veh/h]	147	957	158	116	501	68	175	1233	110	140	747	160
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	10	0	6	10	0	6	10	0	6	10	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	40	0	12	37	0	19	35	0	13	29	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	24	0	0	24	0	0	24	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]	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	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]	10	30	30	8	28	28	12	37	37	9	34	34
g / C, Green / Cycle	0.10	0.30	0.30	0.08	0.28	0.28	0.12	0.37	0.37	0.09	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.08	0.27	0.10	0.07	0.16	0.16	0.10	0.25	0.25	0.08	0.17	0.17
s, saturation flow rate [veh/h]	1781	3560	1589	1781	1870	1793	1781	3560	1793	1781	3560	1707
c, Capacity [veh/h]	179	1072	479	144	526	504	209	1309	659	162	1214	582
d1, Uniform Delay [s]	44.15	33.44	27.15	45.26	30.61	30.63	43.25	26.73	26.73	44.93	26.27	26.30
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]	8.96	2.85	0.40	10.11	0.90	0.95	8.53	2.90	5.65	12.89	1.50	3.14
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	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	0.89	0.33	0.81	0.55	0.55	0.84	0.68	0.68	0.87	0.50	0.51
d, Delay for Lane Group [s/veh]	53.11	36.29	27.55	55.37	31.51	31.58	51.77	29.62	32.37	57.83	27.76	29.45
Lane Group LOS	D	D	C	E	C	C	D	C	C	E	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.99	11.25	2.95	3.22	6.00	5.78	4.70	9.28	9.85	3.98	5.95	6.01
50th-Percentile Queue Length [ft/ln]	99.79	281.17	73.87	80.45	149.90	144.49	117.48	231.97	246.19	99.56	148.69	150.37
95th-Percentile Queue Length [veh/ln]	7.19	16.75	5.32	5.79	10.01	9.72	8.25	14.27	14.99	7.17	9.95	10.04
95th-Percentile Queue Length [ft/ln]	179.63	418.66	132.96	144.80	250.30	243.05	206.36	356.86	374.85	179.20	248.67	250.92

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	53.11	36.29	27.55	55.37	31.54	31.58	51.77	30.38	32.37	57.83	28.07	29.45
Movement LOS	D	D	C	E	C	C	D	C	C	E	C	C
d_A, Approach Delay [s/veh]	37.15			35.58			32.99			32.26		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	34.38											
Intersection LOS	C											
Intersection V/C	0.790											

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	2.785	2.690	2.944	2.955
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]	719	660	620	500
d_b, Bicycle Delay [s]	20.51	22.48	23.84	28.16
l_b,int, Bicycle LOS Score for Intersection	2.601	2.125	2.395	2.135
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 5: Clark Avenue at Lew Davis Street

Control Type:	Signalized	Delay (sec / veh):	8.7
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.501

Intersection Setup

Name	Clark Avenue		Clark Avenue		Lew Davis Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	Clark Avenue		Clark Avenue		Lew Davis Street	
Base Volume Input [veh/h]	24	967	578	47	161	77
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	24	967	578	47	161	77
Peak Hour Factor	0.7930	0.7930	0.7930	0.7930	0.7930	0.7930
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	305	182	15	51	24
Total Analysis Volume [veh/h]	30	1219	729	59	203	97
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	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	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	0	6	2	0	3	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	0	10	10	0	6	0
Maximum Green [s]	0	30	30	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	1.0	0.0
Split [s]	0	33	33	0	57	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	7	7	0	7	0
Pedestrian Clearance [s]	0	14	14	0	21	0
Delayed Vehicle Green [s]	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	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	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
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	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	C	L	R
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]	2.00	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]	69	69	69	69	13	13
g / C, Green / Cycle	0.77	0.77	0.77	0.77	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.04	0.34	0.21	0.22	0.11	0.06
s, saturation flow rate [veh/h]	687	3560	1870	1822	1781	1589
c, Capacity [veh/h]	543	2743	1441	1404	250	223
d1, Uniform Delay [s]	5.02	3.60	3.00	3.02	37.45	35.34
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.19	0.52	0.47	0.50	6.23	1.33
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	0.06	0.44	0.27	0.28	0.81	0.43
d, Delay for Lane Group [s/veh]	5.21	4.12	3.47	3.52	43.68	36.67
Lane Group LOS	A	A	A	A	D	D
Critical Lane Group	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.19	2.84	1.61	1.63	4.69	2.00
50th-Percentile Queue Length [ft/ln]	4.87	71.00	40.25	40.68	117.26	50.05
95th-Percentile Queue Length [veh/ln]	0.35	5.11	2.90	2.93	8.24	3.60
95th-Percentile Queue Length [ft/ln]	8.77	127.80	72.45	73.22	206.05	90.09

Movement, Approach, & Intersection Results

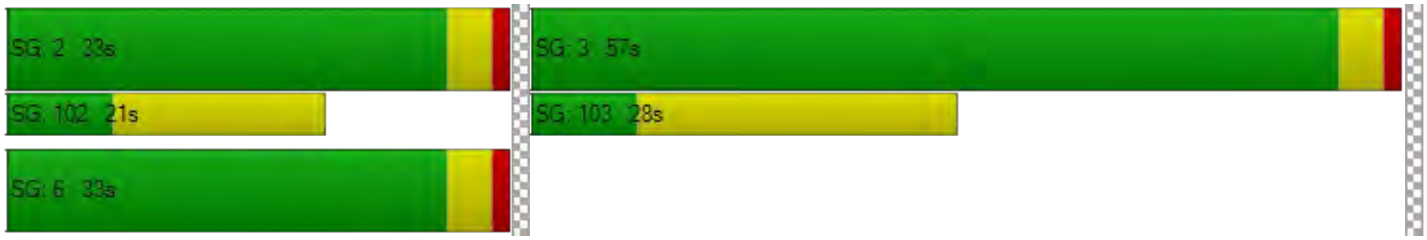
d_M, Delay for Movement [s/veh]	5.21	4.12	3.49	3.52	43.68	36.67
Movement LOS	A	A	A	A	D	D
d_A, Approach Delay [s/veh]	4.15		3.49		41.41	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	8.71					
Intersection LOS	A					
Intersection V/C	0.501					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.63	0.00	34.63
l_p,int, Pedestrian LOS Score for Intersection	2.704	0.000	2.109
Crosswalk LOS	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	645	645	1179
d_b, Bicycle Delay [s]	20.63	20.63	7.58
l_b,int, Bicycle LOS Score for Intersection	2.590	2.210	1.560
Bicycle LOS	B	B	A

Sequence

Ring 1	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: Lakewood Boulevard at Conant Street

Control Type:	Signalized	Delay (sec / veh):	23.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.670

Intersection Setup

Name	Lakewood Boulevard			Lakewood Boulevard			Conant Street			Conant 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	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	No			Yes			Yes			Yes		

Volumes

Name	Lakewood Boulevard			Lakewood Boulevard			Conant Street			Conant Street		
Base Volume Input [veh/h]	167	1392	79	77	1104	21	104	134	449	109	121	89
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	167	1392	79	77	1104	21	104	134	449	109	121	89
Peak Hour Factor	0.9110	0.9110	0.9110	0.9110	0.9110	0.9110	0.9110	0.9110	0.9110	0.9110	0.9110	0.9110
Other Adjustment Factor	1.0000	1.0000	1.0000	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	382	22	21	303	6	29	37	123	30	33	24
Total Analysis Volume [veh/h]	183	1528	87	85	1212	23	114	147	493	120	133	98
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	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	6	10	0	6	10	0	0	10	0	6	10	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	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	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	10	32	0	10	32	0	0	38	0	10	48	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	21	0	0	0	0	0	28	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	2.0	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	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	L	C	C	L	C	R	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]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	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	0.00	2.00	2.00
g_i, Effective Green Time [s]	6	44	44	5	43	43	19	19	19	29	29	29
g / C, Green / Cycle	0.07	0.48	0.48	0.06	0.48	0.48	0.21	0.21	0.21	0.32	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.05	0.30	0.05	0.02	0.23	0.23	0.10	0.08	0.18	0.11	0.07	0.06
s, saturation flow rate [veh/h]	3459	5094	1589	3459	3560	1852	1149	1870	2813	1063	1870	1589
c, Capacity [veh/h]	234	2456	766	207	1689	879	243	398	599	413	608	516
d1, Uniform Delay [s]	41.39	17.27	12.79	40.86	16.13	16.14	36.88	30.31	33.86	22.26	22.12	21.90
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	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	1.00	1.00
d2, Incremental Delay [s]	5.68	1.20	0.30	1.30	0.98	1.88	1.41	0.57	2.91	0.38	0.18	0.18
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	0.78	0.62	0.11	0.41	0.48	0.48	0.47	0.37	0.82	0.29	0.22	0.19
d, Delay for Lane Group [s/veh]	47.07	18.47	13.09	42.16	17.12	18.02	38.29	30.88	36.77	22.65	22.30	22.08
Lane Group LOS	D	B	B	D	B	B	D	C	D	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.16	7.58	0.99	0.94	5.62	6.07	2.45	2.75	5.27	1.85	2.04	1.49
50th-Percentile Queue Length [ft/ln]	54.03	189.47	24.71	23.44	140.45	151.64	61.26	68.68	131.75	46.24	50.99	37.27
95th-Percentile Queue Length [veh/ln]	3.89	12.09	1.78	1.69	9.51	10.10	4.41	4.94	9.03	3.33	3.67	2.68
95th-Percentile Queue Length [ft/ln]	97.25	302.34	44.47	42.19	237.63	252.61	110.27	123.62	225.87	83.24	91.78	67.09

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.07	18.47	13.09	42.16	17.41	18.02	38.29	30.88	36.77	22.65	22.30	22.08
Movement LOS	D	B	B	D	B	B	D	C	D	C	C	C
d_A, Approach Delay [s/veh]	21.12			19.02			35.85			22.36		
Approach LOS	C			B			D			C		
d_I, Intersection Delay [s/veh]	23.20											
Intersection LOS	C											
Intersection V/C	0.670											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	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]	0.00	34.72	34.72	34.72
l_p,int, Pedestrian LOS Score for Intersection	0.000	3.260	2.630	2.430
Crosswalk LOS	F	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	622	622	755	977
d_b, Bicycle Delay [s]	21.40	21.40	17.46	11.79
l_b,int, Bicycle LOS Score for Intersection	2.549	2.286	2.804	2.139
Bicycle LOS	B	B	C	B

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 7: Faculty Avenue at Conant Street

Control Type:	Signalized	Delay (sec / veh):	14.3
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.179

Intersection Setup

Name	Faculty Avenue		Conant Street		Conant Street	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Faculty Avenue		Conant Street		Conant Street	
Base Volume Input [veh/h]	22	151	57	208	194	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	22	151	57	208	194	20
Peak Hour Factor	0.9370	0.9370	0.9370	0.9370	0.9370	0.9370
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	40	15	55	52	5
Total Analysis Volume [veh/h]	23	161	61	222	207	21
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	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]	8.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	7	0	0	2	6	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	6	0	0	10	10	0
Maximum Green [s]	30	0	0	30	30	0
Amber [s]	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	62	0	0	33	33	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	7	0	0	7	7	0
Pedestrian Clearance [s]	18	0	0	11	11	0
Delayed Vehicle Green [s]	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	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	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
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	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
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	2.00	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]	12	12	75	75	75	75
g / C, Green / Cycle	0.12	0.12	0.79	0.79	0.79	0.79
(v / s)_i Volume / Saturation Flow Rate	0.01	0.10	0.05	0.06	0.06	0.06
s, saturation flow rate [veh/h]	1781	1589	1152	3560	1870	1811
c, Capacity [veh/h]	220	196	935	2820	1481	1434
d1, Uniform Delay [s]	36.88	40.51	3.23	2.19	2.18	2.19
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]	0.21	8.18	0.13	0.05	0.10	0.11
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	0.10	0.82	0.07	0.08	0.08	0.08
d, Delay for Lane Group [s/veh]	37.09	48.69	3.37	2.24	2.28	2.30
Lane Group LOS	D	D	A	A	A	A
Critical Lane Group	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.48	4.07	0.28	0.33	0.36	0.36
50th-Percentile Queue Length [ft/ln]	12.09	101.70	7.01	8.22	8.93	8.98
95th-Percentile Queue Length [veh/ln]	0.87	7.32	0.50	0.59	0.64	0.65
95th-Percentile Queue Length [ft/ln]	21.76	183.05	12.62	14.80	16.07	16.16

Movement, Approach, & Intersection Results

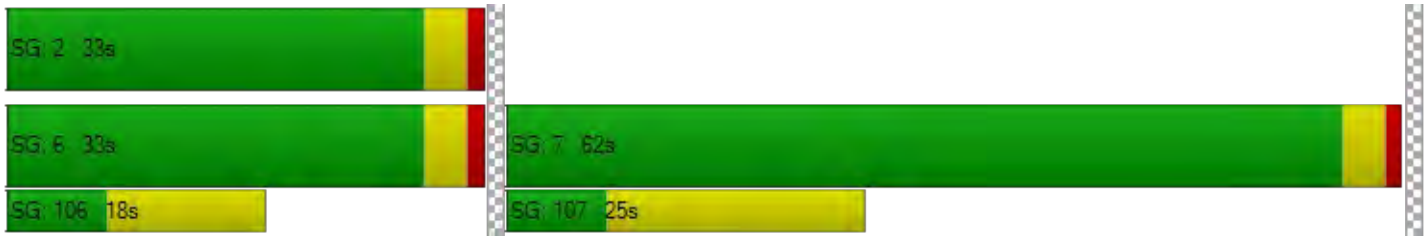
d_M, Delay for Movement [s/veh]	37.09	48.69	3.37	2.24	2.29	2.30
Movement LOS	D	D	A	A	A	A
d_A, Approach Delay [s/veh]	47.24		2.48		2.29	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	14.27					
Intersection LOS	B					
Intersection V/C	0.179					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	37.08	37.08	37.08
l_p,int, Pedestrian LOS Score for Intersection	2.116	2.429	2.249
Crosswalk LOS	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1222	611	611
d_b, Bicycle Delay [s]	7.17	22.88	22.88
l_b,int, Bicycle LOS Score for Intersection	1.560	1.793	1.748
Bicycle LOS	A	A	A

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 8: Clark Avenue at Conant Street

Control Type:	Signalized	Delay (sec / veh):	10.6
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.462

Intersection Setup

Name	Clark Avenue			Clark Avenue			Conant Street			Conant 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	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			Yes			Yes		

Volumes

Name	Clark Avenue			Clark Avenue			Conant Street			Conant Street		
Base Volume Input [veh/h]	114	859	48	25	540	39	62	72	151	16	37	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	114	859	48	25	540	39	62	72	151	16	37	20
Peak Hour Factor	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070	0.8070
Other Adjustment Factor	1.0000	1.0000	1.0000	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	266	15	8	167	12	19	22	47	5	11	6
Total Analysis Volume [veh/h]	141	1064	59	31	669	48	77	89	187	20	46	25
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]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	0	10	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	32	0	0	32	0	0	58	0	0	58	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	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	21	0	0	18	0	0	21	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	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	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	C	C	L	C	C	L	C	R	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]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	2.00
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]	69	69	69	69	69	69	13	13	13	13
g / C, Green / Cycle	0.77	0.77	0.77	0.77	0.77	0.77	0.15	0.15	0.15	0.15
(v / s)_i Volume / Saturation Flow Rate	0.19	0.30	0.30	0.06	0.19	0.19	0.06	0.05	0.12	0.06
s, saturation flow rate [veh/h]	734	1870	1836	501	1870	1826	1329	1870	1589	1644
c, Capacity [veh/h]	575	1431	1405	395	1431	1398	188	272	232	288
d1, Uniform Delay [s]	5.89	3.55	3.55	6.65	3.07	3.07	35.86	34.42	37.15	34.54
k, delay calibration	0.50	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]	1.01	0.82	0.84	0.39	0.43	0.44	1.43	0.69	6.56	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
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	0.25	0.40	0.40	0.08	0.25	0.25	0.41	0.33	0.81	0.32
d, Delay for Lane Group [s/veh]	6.90	4.37	4.39	7.04	3.50	3.51	37.29	35.11	43.71	35.17
Lane Group LOS	A	A	A	A	A	A	D	D	D	D
Critical Lane Group	No	No	Yes	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.08	2.74	2.71	0.25	1.51	1.48	1.63	1.78	4.33	1.82
50th-Percentile Queue Length [ft/ln]	26.91	68.62	67.68	6.37	37.71	36.99	40.67	44.42	108.31	45.48
95th-Percentile Queue Length [veh/ln]	1.94	4.94	4.87	0.46	2.72	2.66	2.93	3.20	7.75	3.27
95th-Percentile Queue Length [ft/ln]	48.43	123.52	121.82	11.47	67.88	66.58	73.21	79.95	193.65	81.86

Movement, Approach, & Intersection Results

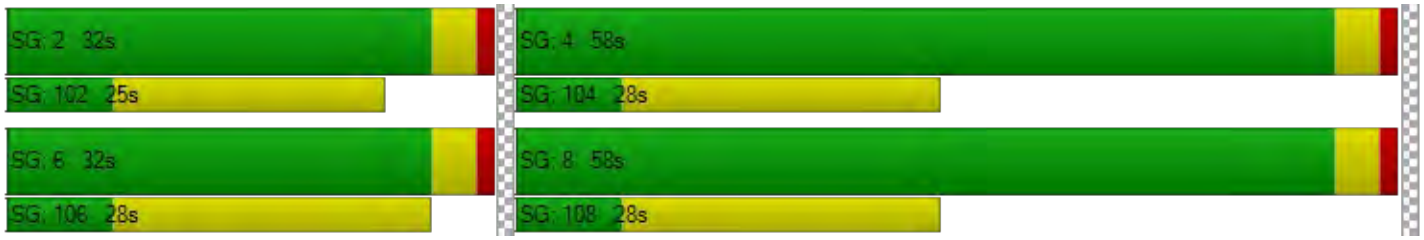
d_M, Delay for Movement [s/veh]	6.90	4.38	4.39	7.04	3.50	3.51	37.29	35.11	43.71	35.17	35.17	35.17
Movement LOS	A	A	A	A	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	4.66			3.65			40.14			35.17		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	10.58											
Intersection LOS	B											
Intersection V/C	0.462											

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]	34.63	34.63	34.63	34.63
l_p,int, Pedestrian LOS Score for Intersection	2.745	2.782	2.748	2.240
Crosswalk LOS	B	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	623	623	1201	1201
d_b, Bicycle Delay [s]	21.32	21.32	7.17	7.17
l_b,int, Bicycle LOS Score for Intersection	2.602	2.177	2.142	1.710
Bicycle LOS	B	B	B	A

Sequence

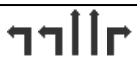
Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 9: Lakewood Boulevard at Wardlow Road

Control Type:	Signalized	Delay (sec / veh):	20.6
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.545

Intersection Setup

Name	Lakewood Boulevard			Lakewood Boulevard			Wardlow Road			Wardlow 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	0	1	0	0	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	Lakewood Boulevard			Lakewood Boulevard			Wardlow Road			Wardlow Road		
Base Volume Input [veh/h]	172	1476	286	224	1344	61	67	61	38	151	72	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
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	172	1476	286	224	1344	61	67	61	38	151	72	138
Peak Hour Factor	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340
Other Adjustment Factor	1.0000	1.0000	1.0000	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	395	77	60	360	16	18	16	10	40	19	37
Total Analysis Volume [veh/h]	184	1580	306	240	1439	65	72	65	41	162	77	148
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	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	10	0	6	10	0	6	10	0	6	10	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	35	0	13	36	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	24	0	0	24	0	0	35	0	0	35	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	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]	8	63	63	9	64	64	5	11	11	7	12	12
g / C, Green / Cycle	0.07	0.60	0.60	0.09	0.61	0.61	0.05	0.10	0.10	0.06	0.12	0.12
(v / s)_i Volume / Saturation Flow Rate	0.05	0.28	0.28	0.07	0.22	0.22	0.02	0.02	0.03	0.05	0.02	0.09
s, saturation flow rate [veh/h]	3459	5094	1676	3459	5094	1817	3459	3560	1589	3459	3560	1589
c, Capacity [veh/h]	249	3029	997	299	3102	1107	177	361	161	226	412	184
d1, Uniform Delay [s]	47.81	11.97	11.97	47.14	10.27	10.27	48.33	43.24	43.57	48.17	42.02	45.33
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	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	1.00	1.00
d2, Incremental Delay [s]	4.26	0.52	1.58	5.03	0.32	0.90	1.50	0.24	0.82	4.20	0.22	8.03
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	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	0.47	0.47	0.80	0.36	0.36	0.41	0.18	0.25	0.72	0.19	0.81
d, Delay for Lane Group [s/veh]	52.07	12.49	13.55	52.17	10.59	11.17	49.83	43.48	44.40	52.37	42.24	53.36
Lane Group LOS	D	B	B	D	B	B	D	D	D	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.50	5.99	6.21	3.28	4.10	4.57	0.95	0.78	1.02	2.21	0.92	4.15
50th-Percentile Queue Length [ft/ln]	62.50	149.73	155.23	81.90	102.55	114.25	23.74	19.62	25.49	55.15	22.88	103.82
95th-Percentile Queue Length [veh/ln]	4.50	10.00	10.30	5.90	7.38	8.08	1.71	1.41	1.84	3.97	1.65	7.48
95th-Percentile Queue Length [ft/ln]	112.49	250.07	257.40	147.42	184.59	201.90	42.73	35.32	45.89	99.26	41.18	186.88

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	52.07	12.60	13.55	52.17	10.72	11.17	49.83	43.48	44.40	52.37	42.24	53.36
Movement LOS	D	B	B	D	B	B	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	16.25			16.44			46.26			50.73		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	20.59											
Intersection LOS	C											
Intersection V/C	0.545											

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	3.336	3.319	2.911	2.740
Crosswalk LOS	C	C	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	590	609	800	800
d_b, Bicycle Delay [s]	26.10	25.40	18.93	18.93
l_b,int, Bicycle LOS Score for Intersection	2.413	2.279	1.706	1.879
Bicycle LOS	B	B	A	A

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 10: Clark Avenue at Wardlow Avenue

Control Type:	Signalized	Delay (sec / veh):	15.6
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.346

Intersection Setup

Name	Clark Avenue			Clark Avenue			Wardlow Avenue			Wardlow Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	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	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			Yes			Yes		

Volumes

Name	Clark Avenue			Clark Avenue			Wardlow Avenue			Wardlow Avenue		
Base Volume Input [veh/h]	37	837	107	102	532	56	117	439	38	36	265	70
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
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	837	107	102	532	56	117	439	38	36	265	70
Peak Hour Factor	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770
Other Adjustment Factor	1.0000	1.0000	1.0000	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	214	27	26	136	14	30	112	10	9	68	18
Total Analysis Volume [veh/h]	38	857	110	104	545	57	120	449	39	37	271	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]	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	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	0	10	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	49	0	0	49	0	0	41	0	0	41	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	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	28	0	0	21	0	0	24	0	0	24	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	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	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	C	C	L	C	C	L	C	C	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]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	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	2.00
g_i, Effective Green Time [s]	58	58	58	58	58	58	24	24	24	24	24
g / C, Green / Cycle	0.64	0.64	0.64	0.64	0.64	0.64	0.27	0.27	0.27	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.05	0.18	0.18	0.18	0.11	0.11	0.12	0.13	0.13	0.13	0.13
s, saturation flow rate [veh/h]	817	3560	1764	581	3560	1781	1037	1870	1818	1365	1600
c, Capacity [veh/h]	542	2274	1126	388	2274	1138	236	509	495	420	436
d1, Uniform Delay [s]	8.92	7.17	7.18	12.09	6.61	6.63	36.72	27.45	27.47	26.47	27.25
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	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	1.00
d2, Incremental Delay [s]	0.25	0.31	0.64	1.69	0.17	0.34	1.69	0.72	0.74	0.69	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	0.07	0.28	0.29	0.27	0.18	0.18	0.51	0.48	0.49	0.43	0.46
d, Delay for Lane Group [s/veh]	9.17	7.49	7.82	13.77	6.78	6.97	38.41	28.17	28.21	27.15	28.01
Lane Group LOS	A	A	A	B	A	A	D	C	C	C	C
Critical Lane Group	No	No	Yes	No	No	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.35	2.51	2.61	1.30	1.43	1.51	2.60	4.46	4.36	3.12	3.61
50th-Percentile Queue Length [ft/ln]	8.87	62.85	65.20	32.53	35.80	37.69	65.10	111.56	109.03	77.92	90.31
95th-Percentile Queue Length [veh/ln]	0.64	4.53	4.69	2.34	2.58	2.71	4.69	7.93	7.79	5.61	6.50
95th-Percentile Queue Length [ft/ln]	15.97	113.14	117.36	58.55	64.43	67.84	117.17	198.17	194.66	140.26	162.56

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.17	7.57	7.82	13.77	6.83	6.97	38.41	28.19	28.21	27.15	27.56	28.01
Movement LOS	A	A	A	B	A	A	D	C	C	C	C	C
d_A, Approach Delay [s/veh]	7.66			7.87			30.21			27.60		
Approach LOS	A			A			C			C		
d_I, Intersection Delay [s/veh]	15.60											
Intersection LOS	B											
Intersection V/C	0.346											

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]	34.67	34.67	34.67	34.67
l_p,int, Pedestrian LOS Score for Intersection	2.873	3.009	2.543	2.533
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1000	1000	822	822
d_b, Bicycle Delay [s]	11.25	11.25	15.61	15.61
l_b,int, Bicycle LOS Score for Intersection	2.112	1.948	2.061	1.873
Bicycle LOS	B	A	B	A

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-